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A;Gene: GDB:CST1
A;Gene: GDB:CST1
A,Gross-references: GDB:119815; OMIM:123855
A;Map position: 20p11.2-20p11.2
C;Superfamily: cystatin; cystatin homology
C;Superfamily: cystatin; cystatin bomology
F;1-20/Domain: signal sequence #status predicted <SIG>F;1-141/Product: cystatin SA-I #status experimental <MATI>F;29-141/Product: cystatin SN #status experimental <MATI>F;29-141/Product: cystatin SN #status experimental <MATI>F;30-141/Domain: cystatin homology <CVS
F;30-141/Domain: cystatin homology <CVS
F;34-104,118-138/Disulfide bonds: #status predicted
                                                                                                                                                                                                                                                                                                                        A;Title: Structure, organization and regulation of a rat cysteine proteinase inhibitor-e
A;Reference number: JQ1470; MUID:92165056; PMID:1537554
A;Accession: JQ1470
A;Accession: JQ1470
A;Molecule type: DNA
A;Residues: 1-141 <COX>
A;COX>
A;Cross-references: GB:M75281; NID:9294537; PIDN:AAA41068.1; PID:9294538
A;Shaw, P.A.; COX, J.L.; Barka, T.; Naito, Y.
J. Biol. Chem. 263, 18133-18137, 1988
A;Title: Cloning and sequencing of cDNA encoding a rat salivary cysteine proteinase inhi
A;Reference number: A31891; MUID:89053983; PMID:3263967
A;Residues: 'ISTDYLYISFEHETLSC',27-141 <SHA>
R;Bedidues: 'ISTDYLYISFEHETLSC',27-141 <SHA>
R;Bedidues: 'ISTDYLYISFEHETLSC',27-141 <SHA>
                        Arch. Biochem. Biophys. 273, 245-253, 1989
A;Title: Amino acid sequence of an inducible cysteine proteinase inhibitor (cystatin)
A;Reference number: S05252; MUID:89334379; PMID:2757396
A;Accession: S05252
A;Molecule type: protein
A;Residues: 28-113,'QE',116-141 <BED'
A;Residues: 28-113,'QE',116-141 <BED'
A;Note: 87-Glu and 88-His were also found; disulfide bonds determined
R;Nishiura, T.; Ishibashi, K.; Abe, K.
Biochim. Biophys. Acta 1077, 346-354, 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cystatin S precursor - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 17-Jul-1992 #sequence_revision 17-Jul-1992
C;Accession: JQ1470; A31891; S05252; S15132
R;Cox, J.L.; Shaw, P.A.
Gene 110, 175-180, 1992
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A;Molecule type: protein
A;Residues: 21-55 <RAM>
C;Comment: Human saliva &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R;Ramasubbu, N.; Reddy, M.S.; Bergey, E.J.; Haraszthy, G.G.; Soni, S.D.; Levine, M.J. Biochem. J. 280, 341-352, 1991
A;Title: Large-scale purification and characterization of the major phosphoproteins and A;Reference number: S19279; MUID:92082469; PMID:1747107
A;Accession: S19279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C;Comment: Human saliva appears to contain ences. Cystatin SN, with a pI of 7.5, is a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Title: Characterization of a new cysteine proteinase inhibitor of human saliva, A;Reference number: A01273; MUID:86164938; PMID:3514272 A;Accession: A01273
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FEBS Lett. 198, 145-149, 1986
A; Title: Isolation of three
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A; Residues: 29-141 <ISE>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     n 37.8%;
Similarity 43.5%;
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forms of cystatin from submandibular saliva of isoproterenol
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Pred. No. 0.88;
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A; Introns:
C; Superfami
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A;Accession: S15132
A;Molecule type: protein
A;Residues: 29-38;76-80 <BIO>
A;Note: forms RSC-1, RSC-2 and RSC-3
C;Genetics:
C;Genetics:
A;Gene: CysS
                                                                                                                                                                                                                                                     A; Molecule type: protein A; Residues: 1-111 < RIT> C; Superfamily: cystatin;
                                                                                                                                                                                                                                                                                                                                     Biochem. J. 246, 799-802, 1987
A;Title: Amino acid sequence of a cystatin from venom of
A;Reference number: A28793; MUID:88076861; PMID:3500714
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C;Species:
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C;Keywords: cysteine proteinase inhibitor
               Search completed: March 18, 2004, 14:23:15
                                                                                                                                                                                                                                                                                                                     A; Accession: A28793
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Job time : 6.19643 secs
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Best Local (
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10; Conserv
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Pred. No. 1.9;
7; Mismatches
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Pred. No. 1.2;
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C;Accession: A43428; B43927
R;Lustigman, S.; Brotman
J. Biol
                        A; Molecule type: protein
A; Residues: 29-134, 'D',136-141 <ISE>
A; Residues: 29-134, 'D',136-141 S; Isemura, M.; Sanada, K.
R; Isemura, S.; Saitoh, E.; Ito, S.; Isemura, M.; Sanada, K.
J. Biochem. 96, 1311-1314, 1984
A; Title: Cystatin S: a cysteine proteinase inhibitor of human saliva.
A; Reference number: A91981; MUID:85104877; PMID:6394600
A; Contents: annotation; inhibitor specificity
A; Chawke, D.H.; Yuan, P.M.; Wilson, K.J.; Hunkapiller, M.W.
R; Hawke, D.H.; Yuan, P.M.; Wilson, K.J.; Hunkapiller, M.W.
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J. Biol. Chem. 267, 17339-17346, 1992
A; Title: Molecular cloning and characterization of onchocystatin, a cysteine proteinase A; Reference number: A43428; MUID:92381053; PMID:1512269
A; Accession: A43428
A; Status: preliminary
A; Molecula type: mRNA
A; Residues: preliminary
A; Molecule type: mRNA
A; Residues: 1-162 cLUS>
A; Cross-references: GB:M37105; NID:g159905; PID:g159906
A; Cross-references: GB:M37105; NID:g159905; PMID:11962, NCBIP:111963)
A; Chandrashekar, R; Masood, K; Alvarez, R.M.; Ogunrinade, A.F.; Lujan, R.; Richards Jz
J. Clin. Invest. 88, 1460-1466, 1991
J. Clin. Invest. 88, 1460-1466, 1991
A; Title: Molecular Cloning and characterization of recombinant parasite antigens for imm
A; Reference number: A43927; MUID:92042729; PMID:1840605
                                                                                                                                                                                                                                                                                                 A;Molecule type: protein
A;Residues: 21-134,'D',136-141 <IHU>
A;Residues: 21-134,'D',136-141 <IHU>
R;Isemura, S.; Saitoh, E.; Sanada, K.

J. Biochem. 96, 489-498, 1984
A;Title: Isolation and amino acid sequence of SP-1, an acidic protein of human whole sal
A;Reference number: A91985; MUID:85054716; PMID:6501254
A;Recession: A01272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Cross-references: EMBL:X54667; NID:g30365; PIDN:CAA38478.1; PID:g30366 R;Lamkin, M.S.; Jensen, J.L.; Setayesh, M.R.; Troxler, R.F.; Oppenheim, Parch. Biochem. Biophys. 288, 664-670, 1991
A;Title: Salivary cystatin SA-III, a potential precursor of the acquired A;Reference number: S16500; MUID:91378515; PMID:1898055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N;Alternate names: cysteine proteinase inhibitor; onchocerciasis antigen C;Species: Onchocerca volvulus C;Date: 04-Mar-193 #sequence_revision 18-Nov-1994 #text_change 17-Mar-20 C;Accession: A43428; B43927
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Biochem. J. 278, 627-635, 1991
A;Title: Human salivary cystatin S. Cloning, sequence analysis, A;Reference number: S17667; MUID:91378918; PMID:1898352
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A;Note: sequence extracted from NCBI backbone (NCBIN:65111, NCBIP:65113)
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A;Molecule type: mRNA
A;Residues: 'P',37-57,'A',59-71,'R',73-83,'N',85-126,'M',128-162 <CHA>
A;Cross-references: GB:M60279; NID:g159888
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;Date: 25-Feb-1985 #sequence revision 08-Feb-1996 #text change
;Accession: S17667; S16500; A01272; A29603; S19280; A56608
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Pred. No. 0.51;
Hunkapiller, M.W.
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C;Species: Homo sapiens (man)
C;Date: 28-May-1986 #sequence revision 08-Feb-1996 #text_change 08-Dec-2000
C;Date: 28-May-1986 #sequence revision 08-Feb-1996 #text_change 08-Dec-2000
C;Accession: A28110; S02489; A29632; A01273; S19279
R;Al-Hashimi, I. Dickinson, D.P.; Levine, M.J.
J. Biol. Chem. 263, 9381-9387, 1988
A;Title: Purification, molecular cloning, and sequencing of salivary cystatin SA-I.
A;Reference number: A28110; MUID:88243825; PMID:2837486
A;Accession: A28110
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(;Superfamily: cystatin; cystatin homology
C;Keywords: cystetine proteinase inhibitor; phosphopro
F;1-20/Domain: signal sequence #status predicted <SIV
F;21-141/Product: cystatin S #status predicted <MAT>
F;30-141/Domain: cystatin homology <CYS
F;6-80/Region: inhibitory #status predicted
F;94-104,118-138/Disulfide bonds: #status predicted
Gene 61, 329-338, 1987
A;Title: Human cysteine-proteinase inhibitors: nucleotide
A;Reference number: A91589; MUID:88185836; PMID:3446578
                                                              A;Residues: 21-141 <SA2>
R;Saitoh, E.; Kim, H.S.; Smithies,
Gene 61, 329-338, 1987
                                                                                                                                                                                                                                                 A;Cross-references: GB:J03870; NID:g337751; PIDN:AAA60299.1; PII
R;Saitch, E.; Isemura, S.; Sanada, K.; Kim, H.S.; Smithies, O.;
Biol. Chem. Hoppe-Seyler 369, 191-197, 1988
A;Title: Cystatin superfamily. Evidence that family II cystatin
A;Reference number: S02489; MUID:89076505; PMID:3202964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Note: sequence extracted from NCBI backbone (NCBIP:67866)
A;Note: authors desigate form without phosphate as cystatin C;Comment: This protein strongly inhibits papain and ficin,
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R;Johnsson, M.; Richardson, C.F.; Bergey, E.J.; Levine, M.J.; Nancollas, G.H.
Arch. Oral Biol. 36, 631-636, 1991
A;Title: The effects of human salivary cystatins and statherin on hydroxyapatite crystall
A;Reference number: A56608; MUID:92074898; PMID:1741693
A;Accession: A56608
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A;Title: Large-scale purification and characterization of the major phosphoproteins and A;Reference number: S19279; MUID:92082469; PMID:1747107
A;Accession: S19280
                                                                                                                                                                                                                           A; Reference number: A; Accession: S02489
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A; Residues: 1-141 < ALH>
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N;Alternate names: cystatin SA-I
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                                                                                                                                                            A; Molecule type:
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                                                                                                                                                                                              Status: not compared with conceptual translation
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9; Conserv
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Pred. No. 0.88
8; Mismatches
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                                                                                                    O.; Maeda, N.
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dicted <SIG>
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cystatin C precursor - mouse
C;Species: Mus musculus (house mouse)
C;Date: 14-Dec-1990 #sequence_revision 14-Dec-1990 #text_change 16-Jul-1999
C;Accession: A36163
R;Solem, M.; Rawson, C.; Lindburg, K.; Barnes, D.
Biochem. Biophys. Res. Commun. 172, 945-951, 1990
A;Title: Transforming growth factor beta regulates cystatin C in serum-free A;Reference number: A36163; MUID:91054522; PMID:2241983
A;Accession: A36163
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-140 <SOL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: protein
A; Residues: 8, 'XX', 11-20 <ES2>
C; Superfamily: cystatin; cystatin homology
C; Keywords: cysteine proteinase inhibitor
F; 16-127/Domain: cystatin homology <CYS>
F; 80-90, 104-124/Disulfide bonds: #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Molecule type: protein
A;Residues: 8-49 < KSN.
A;Residues: 8-49 < KSN.
R;Esnard, A.; Esnard, F.; Guillou, F.; Gauthier, F.
FEBS Lett. 300, 131-135, 1992
A;Title: Production of the cysteine proteinase inhibitor
A;Reference number: S21109; MUID:92225121; PMID:1563513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C;Species: Rattus norvegicus (Norway rat)
C;Date: 01-Dec-1993 #sequence revision 03-Aug-1995 #text_change 16-Jul-1999
C;Accession: S07085; S01337; S21109
R;Cole, T.; Dickson, P.W.; Esnard, F.; Averill, S.; Risbridger, G.P.; Gauthier, Bur. J. Biochem. 186, 35-42, 1989
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A;Note: 43-Asn was also found
A;Note: the sequence from Fig.
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A;Title: Two rat homologues of human cystatin C. A;Reference number: S01337; MUID:88313020; PMID:3044831
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Pred. No. 0.05;
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Pred. No. 0.047;
B; Mismatches
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R;Fleischmann, R.D.; Adams, M.D.; White, O.; Clayton, R.A.; Kirkness, E.F.; Kerlavage, Gocayne, J.D.; Scott, J.; Shirley, R.; Liu, L.I.; Glodek, A.; Kelley, J.M.; Weldman, D.M.; Brandon, R.C.; Fine, L.D.; Fritchman, J.L.; Fuhrmann, J.L.; Geoghagen, N.S.M. Science 269, 496-512, 1995
A;Authors: Gnehm, C.L.; McDonald, L.A.; Small, K.V.; Fraser, C.M.; Smith, H.O.; Venter, A;Title: Whole-genome random sequencing and assembly of Haemophilus influenzae Rd. A;Reference number: A64000; MUID:95350630; PMID:7542800
A;Accession: E64005
                                                                                                                                                                   A; Molecule type: protein A; Residues: 1-47 <CIM>C; Superfamily: cystatin:
                                                                                                                                                                                                                                                    R;Cimerman, N.; Drobnic Kosorok, M.; Korant, B.D.; Turk, B.; Turk, Biol. Chem. Hoppe-Seyler 377, 19-23, 1996
A;Title: Characterization of cystatin C from bovine parotid glands A;Reference number: S62326; MUID:97083236; PMID:8929810
A;Accession: S62326
                                                                                                                                                                                                                                                                                                                                                                         cystatin C, parotid glands - bovine (fragment)
C;Species: Bos primigenius taurus (cattle)
C;Date: 28-Oct-1996 #sequence_revision 13-Mar-1997 #text_change 07-May-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       hypothetical protein HI0284 - Haemophilus influenzae (strain Rd KW20) C;Species: Haemophilus influenzae C;Date: 18-Aug-1995 #sequence_revision 18-Aug-1995 #text_change 26-Aug-1999 C;Accession: E64005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Cross-references: EMBL:MS9470; NID:g192911; PIDN:AAA63298.1; C;Superfamily: cystatin; cystatin homology F;29-140/Domain: cystatin homology <CYS>F;93-103,117-137/Disulfide bonds: #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Start codon: GTG
C;Superfamily: Haemophilus influenzae hypothetical protein HI028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: DNA
A; Residues: 1-139 < TIGR>
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                                                                                                                                                                                                                                                                                                                                                                C; Accession: S62
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                                                                                Matches
                                                                                                       Query Match
Best Local
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                                      QYNKESDDKYHFRIFRVLKVQRQ 24
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                                                                              40.6%; llarity 39.1%; Conservative
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                                                                                Pred.
8; Mis
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                                                                                                       Score 58;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 59; DB 2
Pred. No. 0.15;
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Pred. No.
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nematode

(Onchocerca volvulus)

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A;Accession: A60552
A;Molecule type: protein
A;Molecule type: protein
A;Residues: 27-49,'XX',52-64 <OLA>
A;Residues: 27-49,'XX',52-64 <OLA>
A;Residues: 27-49,'XX',52-64 <OLA>
A;Rote: this protein, purified from cerebrospinal fluid of patients with the autosomal e defective gene is not present in CSF but is found instead in amyloid deposits R;Popovic, T.; Brzin, J.; Ritonja, A.; Turk, V.
Biol. Chem. Hoppe-Seyler 371, 575-580, 1990
A;Title: Different forms of human cystatin C.
A;Reference number: S10607; MUID:91025625; PMID:2222856
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Proc. Natl. Acad. Sci. U.S.A. 79, 3024-3027, 1982

Proc. Natl. Acad. Sci. U.S.A. 79, 3024-3027, 1982

A;Title: Human gamma-trace, a basic microprotein: amino acid sequence and presence in the procession: A01270

A;Reference number: A01270; MUID:82222268; PMID:6283552

A;Residues: 27-131.'S',133-146 <GRU>
A;Ribiso, J.; Jensson, O.; Frangione, B.

Proc. Natl. Acad. Sci. U.S.A. 83, 2974-2978, 1986

Proc. Natl. Acad. Sci. U.S.A. 83, 2974-2978, 1986

A;Holerance number: A25434; MUID:86206076; PMID:3517880

A;Accession: A25434
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R;Saitch, E.; Sabatini, L.M.; Eddy, R.L.; Shows, T.B.; Azen, E.A.; Isemura, S.; San Biochem. Biophys. Res. Commun. 162, 1324-1331, 1989

A;Title: The human cystatin C gene (CST3) is a member of the cystatin gene family w A;Reference number: A33400; MUID:89350949; PMID:2764935

A;Accession: A33400

A;Molecule type: DNA

A;Residues: 1-24,'T,6-146 <SAI>
A;Cross-references: GB:M27889; GB:M27890; GB:M27891; NID:g181385; PIDN:AAA52164.1;
A;Ghiso, J.; Cowan, N.; Frangione, B.
Biol. Chem. Hoppe-Seyler 369, 205-208, 1988

A;Reference number: S02751; MUID:89076507; PMID:3264504

A;Accession: S02751
                                                                                                                                                                                                                                A;Experimental source: urine, kidney disease A;Note: truncated forms with amino ends at portion of the control 
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A;Residues: 37-93, Q',95-146 <GHI>
R;Turk, V.; Brzin, J.; Longer, M.; Ritonja, A.; Eropkin, M.; Borchart, U.; Machleidt, W. Hoppe-Seyler's Z. Physiol. Chem. 364, 1487-1496, 1983
A;Title: Protein inhibitors of cysteine proteinases. III. Amino-acid sequence of cystati A;Reference number: S01461; MUID:84110059; PMID:6662498
A;Accession: S12288
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Biochem. Biophys. Res. Commun. 118, 103-109, 1984
A;Title: Human cystatin, a new protein inhibitor of cysteine proteinases.
A;Reference number: A32732; MUID:84128015; PMID:6365094
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A; Residues: 27-73 < TUR>
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A;Residues: 82-119 <GH2>
A;Cross-references: EMBL:M27769
                                                                                                    R; Berti, P.J.; Storer, A.C.
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                                                                                                                                               A; Contents: annotation; disulfide bonds
                       Local pH-dependent
                                                              J. 302,
                                                                       1994
conformational changes leading to proteolytic susceptibility
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                                                                                                                                                                                                                                                                                                                                                                                    positions
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cystatin C - rat

(;Species: Rattus sp. (rat)

(;Species: Rattus sp. (rat)

(;Date: 21-Nov-1993 #sequence_revision 03-Nov-1995 #text_change 16-Jul-1999

C;Accession: $10587

R;Esnard, F.; Esnard, A.; Faucher, D.; Capony, J.P.; Derancourt, J.; Brillard

Biol. Chem. Hoppe-Seyler 371(Suppl.), 161-166, 1990

A;Title: Rat Cystatin C: the complete amino acid sequence reveals a site for

A;Reference number: $10587; MUID:90380276; PMID:2400577

A;Accession: $10587
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S10587
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C;Superfamily: Cystatin; cystatin homology
C;Keywords: amyloid; cystatine proteinase inhibitor; extracellular protein; hydroxyproline
F;1-26/Domain: signal sequence #status predicted cSIGs
F;27-146/Product: cystatin C #status experimental <MATS
F;35-146/Domain: cystatin homology cCYSs
F;81-85/Region: inhibitory #status predicted
F;29/Modified site: hydroxyproline (Pro) (partial) #status experimental
F;99-109,123-143/Disulfide bonds: #status experimental
                                                                                                                                                                                   C;Superfamily: cystatin; cystatin homology C;Keywords: colostrum; cysteine protesinase inhibitor F;2-112/Domain: cystatin homology <CYS> F;48-52/Region: inhibitory #status predicted F;66-76,90-110/Disulfide bonds: #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                       C;Date: 28-Feb-1986 #sequence_revision C;Accession: A01271 R;Hirado, M.; Tsunasawa, S.; Sakiyama,
                                                                                                                                                                                                                                                                                                              A; Molecule type: protein A; Residues: 1-112 <HIR>
                                                                                                                                                                                                                                                                                                                                                                                 A;Title: Complete amino acid sequence of bovine colostrum low-M-rA;Reference number: A01271; MUID:85231205; PMID:3891407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N;Alternate names: thiol proteinase inhibitor C;Species: Bos primigenius taurus (cattle)
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A; Introns: 81/3; 119/3
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A;Map position: 20p11.2-20p11.2
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A;Accession: S55305
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Best Local
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Comment: This protein is an inhibitor of cysteine proteinases and may serve an important comment: A mutant cystatin C, with 94-Gln, is deposited in hereditary cerebral hermorrh
                                                                                                                                         Query Match
                                                                                                                     Local
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                                                                                            1 Similarity
                                          2 QYNKESDDKYHFRIFRYLKVQRQV 25
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27-49;106-146 <BER>
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EFNKRSNDAYQSRVVRVVRARKQV
                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                43.48;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                         S.; Sakiyama, F.; Niinobe, M.; Fujii,
                                                                                            8; Mismatches
                                                                                                                Score 62;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
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Pred. No. 0.021;
8; Mismatches
49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28-Feb-1986 #text_change 06-Dec-1996
                                                                                                                       0
                                                                                                                  DB 1;
0.043;
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                                                                                                                                         Length 112;
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J.; Brillard,

Gauthi

N-glycosyla

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A;Gene: Csn
A;Introns: 76/3; 114/3
A;Introns: 76/3; 114/3
C;Superfamily: cystatin; cystatin homology
C;Superfamily: cystatin; cystatins predicted <SIG>
F;24-139/Domain: signal sequence #status predicted <SIG>
F;24-139/Product: cystatin, long form #status experimental <CYLF>
F;30-139/Domain: cystatin, bomology <CYS>
F;32-139/Product: cystatin, short form #status experimental <CYSF>
F;76-80/Region: inhibitory #status predicted
F;94-104,118-139/Disulfide bonds: #status experimental
F:103/Binding site: phosphate (Ser) (covalent) (partial) #status experi
          A;Cross-references: GB:M95725

A;Note: authors failed to translate the codon for residue 115-Tyr
C;Comment: This protein binds tightly to and inhibits a variety of cysteine proteinases
C;Genetics:
                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R;Colella, R.; Bird, J.W.C. Gene 130, 175-181, 193 Gene 130, 175-181, 193 A;Title: Isolation and characterization of the chicken cystatin-encoding gene: Mapping A;Reference number: JN0789; MUID:93366172; PMID:8359684
                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEBS Lett. 248, 162-168, 1989
A;Title: The cysteine proteinase inhibitor chicken cystatin A;Reference number: S04008; MUID:89252033; PMID:2721673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Molecule type: protein
A;Residues: 24-139 <AUE>
R;Labber, B.; Krieglstein, K.; Henschen, A.; Kos, J.; Turk, V.; Huber, R.; Bode,
FEBS Lett. 248, 162-168, 1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eur. J. Biochem. 224, 407-415, 1994
A;Title: Production, inhibitory activity, folding and conformational analysis of an N-te
A;Reference number: S48159; MUID:95010016; PMID:7925354
A;Accession: S48159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R;Grubb, A.; Lofberg, H.; Barrett, A.J.
FEBS Lett. 170, 370-374, 1984
A;Title: The disulphide bridges of human cystatin C (gamma-trace) and chicken cystatin.
                                                                                                                                                                                                                                                   RESULT 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: DNA
A; Residues: 1-139 <CO2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: protein A; Residues: 97-114 < LAB>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R;Anastasi, A.; Brown, M.A.; K
Biochem. J. 211, 129-138, 1983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Molecule type: protein A; Residues: 24-139 < TUR >
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A; Accession:
                                                                                                                                                                                                                                B29632
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Contents: annotation; disulfide bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Reference number: S01462
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                                                                                                                                                                                                                                                                                                                               EYNRASNDKYSSRVVRVISAKRQL
                                                                                                                                                                                                                                                                                                                                                               QYNKESDDKYHFRIFRVLKVQRQV 25
                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                    46.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 66; DB 1;
Pred. No. 0.014;
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                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
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               A; Molecule type: DNA
A; Residues: 1-146 <LEV>
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A;Cross-references: GB:M19673; GB:M19170; NID:g186403; PIDN:AAA36116.1; PID:g386826
A;Note: the authors translated the codon GAC for residue 129 as Asn
R;Saitoh, E.; Isemura, S.; Sanada, K.; Kim, H.S.; Smithies, O.; Maeda, N.
Biol. Chem. Hoppe-Seyler 369, 191-197, 1989
A;Title: Cystatin superfamily. Evidence that family II cystatin genes are evolutionarily
A;Reference number: S02489; MUID:89076505; PMID:3202964
A;Molecule type: mRNA
A;Residues: 1-146 < AB82:
A;Cross-references: EMBL:X05607; NID:g30371; PIDN:CAA29096.1; PID:g755738
A;Cross-references: EMBL:X05607; NID:g30371; PIDN:CAA29096.1; PID:g755738
A;Levy, E.; Lopez-Otin, C.; Ghiso, J.; Geltner, D.; Frangione, B.
J. Exp. Med. 169, 1771-1778, 1989
A;Title: Stroke in Icelandic partients with hereditary amyloid angiopathy is related A;Reference number: JL0095; MUID:89235594; PMID:2541223
A;Accession: JL0095
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A; Residues: 1-141 < SAI>
A; Cross-references: GR.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C;Date: 06-Jul-1982 #sequence revision 31-Mar-1991 #text change 08-Dec-2000 C;Accession: S10216; S00004; JL0095; A33400; S02751; A01270; A25434; S12288; R;Abrahamson, M.; Olafsson, I; Palsdottir, A.; Ulvsbaeck, M.; Lundwall, A.; Biochem. J. 268, 287-294, 1990 A;Title: Structure and expression of the human cystatin C gene. A;Reference number: S10216; MUID:90303202; PMID:2363674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C;Superfamily: cyscatin, cross-crys-
F;30-141/Domain: cystatin homology <CYS>
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A;Map position: 20p11.2-20p11.2
C;Superfamily: cystatin; cystatin homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: protein A; Residues: 25-141 <152; R; Isemura, S; Satioh, E; Sanada, K.; Isemura, M.; in Cysteine Proteinases and Their Inhibitors, Turk, A; Title: Cystatin S and the related cysteine protein A; Reference number: A27015
A; Accession: B27015
                                                                                                                                                                                                                                                                                                                             A;Cross-references: EMBL:X52255; NID:g30257; PIDN:CAA36497.1; PID:g296643 R;Abrahamson, M.; Grubb, A.; Olafsson, I.; Lundwall, A. FEBS Lett. 216, 229-233, 1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Title: Characterization and amino acid sequence of a new acidic cysteine A;Reference number: A41422; MUID:88139220; PMID:3436950
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                                                                                                                                                                                                                                                                     A; Title: Molecular cloning and sequence analysis of cDNA coding A; Reference number: S00004; MUID:87219149; PMID:3495457
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A; Residues: 1-146 < AB1>
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A;Residues: 25-134,'D',136-141 <IS2>
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                                                                                                                                                                                                                                                A; Accession: S00004
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cystatin C precursor [validated] - human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Species: Homo sapiens (man)
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EYNKATEDEYYRRLLRVLRAREQI 77
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Pred. No.
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                                                                                                                                                                                                                                                                                                       for the precursor
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Jensson,
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GB:X61681; NID:g30367; PIDN:CAA43856.2;

PID:g4490944

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Title:
Perfect score:
Sequence:
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Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OM protein - protein search, using sw model
                                                                            Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Run on:
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Maximum DB seq length: 200000000
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PIR 78:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
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143
1 DQYNKESDDKYHFRIFRVLKVQRQVTD 27
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                                                                                                                                                                                                                                                                                                        Gapop 10.0 , Gapext 0.5
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Copyright (c) 1993 - 2004 Compugen Ltd.
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	σ	ហ	4	w	N		Result No.
47	47	47	47	47	47.5	48	49	49	49	49	50	50	50.5	51	53	54	54	56	58	59	62	62	62	62	65	66	66	76	Score
32.9	N	32.9						34.3			35.0	35.0	35.3	35.7	37.1	7	7	φ	40.6	41.3	٠	43.4	43.4	43.4	45.5	٥,	46.2	53.1	Query
602	602	602	370	224	505	917	1146	525	498	442	393	319	394	111	141	141	141	162	47	139	140	127	120	112	146	141	139	139	Length
N.	N	N	N	N	ب	ب	N	Н	N	N	N	N	N	N	N	Н	Н	N	N	N	N	N	N	_	_	N	سر	N	B
A35564	397	869198	T47762	S54519	P5XRA4	RDMUNH	S46837	KGHUGH	T31871	T06640	D86168	A86650	T33641	A28793	JQ1470	UDHUP2	TANHOD.	A43428	862326	E64005	A36163	S07085	S10587	UDBO	UHU	B29632	UDCH	53	ID
prostagiandin-endo	cyclooxygenase 1 -	prostaglandin G/H	hypothetical prote		outer capsid prote	Ω	hypothetical prote				hypothetical prote		hypothetical prote	1	S	S	cystatin S precurs	tat	d, J	ical	a	rd D	cystatin C - rat	•	J C		cystatin precursor	-related	Description

ALIGNMENTS

RESULT 2 UDCH Cystatin precursor - chicken N;Alternate names: cystatin 1; cysteine proteinase inhibitor; egg-white Cystatin N;Alternate names: cystatin 1; cysteine proteinase inhibitor; egg-white cystatin C;Species: Gallus gallus (chicken) C;Date: 03-Aug-1984 #sequence_revision 12-Apr-1996 #text_change 29-Oct-1999 C;Accession: A34456; A01274; S01461; S48159; S04008; JN0789 R;Colella, R.; Sakaguchi, Y.; Nagase, H.; Bird, J.W.C. J. Biol. Chem. 264, 17164-17169, 1989 A;Title: Chicken egg white cystatin. Molecular cloning, nucleotide sequence, and tissue captures on the cystatin. A34456; MUID:90008873; PMID:2793849 A;Reference number: A34456; MUID:90008873; PMID:2793849 A;Accession: A34456 A;Molecule type: mRNA A;Residues: 1-139 <col/> A;Cols-C; Anastasi, A.; Crow, H.; McDonald, J.K.; Barrett, A.J. Biochem. J. 217, 813-817, 1984 A;Title: Cystatin. Amino acid sequence and possible secondary structure. A;Reference number: A01274 A;Molecule type: protein A;Residues: 24-139 <sch> A;Molecule type: protein A;Residues: 24-139 <sch> R;Turk, V.; Brzin, J.; Longer, M.; Ritonja, A.; Eropkin, M.; Borchart, U.; Machleidt, W. Hoppe-Seyler's Z. Physiol. Chem. 364, 1487-1496, 1983</sch></sch>	RESULT 1 A45361 Cystatin-related epididymal specific protein - mouse (fragment) C;Species: Mus musculus (house mouse) C;Date: 10-Jun-1993 #sequence_revision 18-Nov-1994 #text_change 05-Nov-1999 C;Accession: A45361 R;Cornwall, G.A.; Orgebin-Crist, M.C.; Hann, S.R. Mol. Endocrinol. 6, 1633-1664, 1992 A;Title: The CRES gene: a unique testis-regulated gene related to the cystatin family is A;Reference number: A45361; MUID:93078799; PMID:1280328 A;Accession: A45361 A;Status: preliminary; not compared with conceptual translation A;Molecule type: nucleic acid A;Residues: 1-139 *CCN> A;Cross-references: GB:S49926; NID:g260492; PIDN:AAC35390.1; PID:g260493 A;Note: sequence extracted from NCBI backbone (NCBIP:118813) C;Superfamily: cystatin; cystatin homology F;28-139/Domain: cystatin homology <cys> Query Match Best Local Similarity 50.0%; Pred. No. 0.00044; Matches 13; Conservative 7; Mismatches 6; Indels 0; Gaps 0; Qy 2 QYNKESEDKYYFILVEKURROUTD 27 [</cys>

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RESULT 15
US-08-849-303-15
US-08-849-303-15
; Sequence 15, Application US/08849303
; Publication No. US20030221209A1
; GENERAL INFORMATION:
; APPLICANT: McPherson, Howard J.
APPLICANT: Urwin, Peter E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; SEQ ID NO 8
; LENGTH: 121
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-775-932-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 14
US-09-775-932-8
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CURRENT APPLICATION NUMBER: US/09/775,932
CURRENT FILING DATE: 2001-02-02
PRIOR APPLICATION NUMBER: CA99/00717
PRIOR FILING DATE: 1999-08-05
PRIOR APPLICATION NUMBER: 60/095,503
PRIOR FILING DATE: 1998-08-05
NUMBER OF SEQ ID NOS: 32
SOFTWARE: Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PATERIAL IN. GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: University of British Columbia
APPLICANT: University of British Columbia
OF INVENTION: Production and use of Modified Cystatins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
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Best Local Similarity
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                                                                  COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/849,303
FILING DATE: 21-MAY-1997
CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: Jackson Esq., David A.
REGISTRATION NUMBER: 26,742
REFERENCE/DOCKET NUMBER: 1321-1-003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS:
ADDRESSEE: Klauber & Jackson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Urwin, Peter E.
TITLE OF INVENTION: MODIFIED PROTEINASE INHIBITORS
NUMBER OF SEQUENCES: 79
TELECOMMUNICATION INFORMATION: TELEPHONE: 201-487-5800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        y match
Local Similarity 41.7%;
hes 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET: 411 Hackensack Avenue, 4th Floor
CITY: Hackensack
STATE: New Jersey
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 QYNKESDDKYHFRIFRVLKVQRQV 25 | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | 
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Pred. No. 0.038;
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Pred. No. 0.04;
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MOLECULE TYPE: protein HYPOTHETICAL: NO US-08-849-303-15
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                                                         Query Match 46.2%;
Best Local Similarity 45.8%;
Matches 11; Conservative
                                                                                                                                                                                                       INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS LENGTH: 139 amino acid
                                                                                                                                                            TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
54 EYNRASNDKÝSSKVVŘVISAKRÓL 77
                              2 QYNKESDDKYHFRIFRVLKVQRQV 25
                                                                                                                                                                                                        139 amino acids
                                                            7;
                                                                          Score 66; DB 8;
Pred. No. 0.046;
                                                           Mismatches
                                                                                        DB 8;
                                                              6
                                                                                        Length 139;
                                                              Indels
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Gaps

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Search completed: March 18, 2004, 14:30:53
Job time: 16.3393 secs

FILING DATE: 2001-01-30

0;

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; OTHER INFORMATION: MAP TO AL096677.18; OTHER INFORMATION: EXPRESSED IN BT474, SIGNAL = 0.96; OTHER INFORMATION: EST_HUMAN HIT: AIZ00857.1, EVALUE 5.00e-23; OTHER INFORMATION: SWISSPROT HIT: O60676, EVALUE 1.00e-01 US-09-864-761-48936
                                                                                                                                                            RESULT 11
US-09-941-314-14
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                                                                                                                                                                                                                                                                                                                                                                                                  ; ORGANISM: Homo sapiens
US-09-941-314-10
                  Sequence 14, Application US/09941314
Patent No. US20020143396A1
GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
FILE REFERENCE: 00-81PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
FILE REFERENCE: 00-61PC
                                                                                                                                                                                                                                                                                                                       Matches
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Patent No. US20020142396A1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION NUMBER: US 60/234,687
PRIOR FILING DATE: 2000-09-21
PRIOR APPLICATION NUMBER: US 09/608,408
PRIOR FILING DATE: 2000-06-30
PRIOR APPLICATION NUMBER: US 09/774,203
PRIOR FILING DATE: 2001-01-29
NUMBER OF SEQ ID NOS: 49117
CURRENT APPLICATION NUMBER: US/09/941,314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: Annomax Sequence Listing Engine vers. 1.1
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TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 46
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FILING DATE: 2001-01-30
APPLICATION NUMBER: PCT/US01/00670
FILING DATE: 2001-01-30
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                                                                                                                                                                                                                                                                               4 NKESDDKYHFRIFRVLKVQRQVTD 27
                                                                                                                                                                                                                                                                                                                                            Similarity
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                                                                                                                                                                                                                                                                                                            87.4%; but
100.0%; Pr
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100.0%; Pr/
                                                                                                                                                                                                                                                                                                                                        Score 125;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 128; DB 9;
Pred. No. 1e-11;
                                                                                                                                                                                                                                                                                                                       Mismatches
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                                       Protein
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NUMBER OF SEQ ID NOS: 4350
SOFTWARE: Patentin Ver. 3.1
SEQ ID NO 2608
LENGTH: 181
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US-10-264-049-2608
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                                                SOFTWARE: P
SEQ ID NO 16
LENGTH: 116
                                                                                                                                                                                                                                                                                                 Sequence 16, Application US/09775932
Patent No. US20020137671A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
APPLICANT: Birse et al.
TITLE OF INVENTION: Nucleic Acids, Proteins, and Antibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 2608, Application US/10264049 Publication No. US20040005579A1
                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
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Best Local
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                                                                                                                                   CURRENT APPLICATION NUMBER: US/09/775,932
CURRENT FILING DATE: 2001-02-02
PRIOR APPLICATION NUMBER: CA99/00717
PRIOR FILING DATE: 1999-08-05
PRIOR APPLICATION NUMBER: 60/095,503
ORGANISM: Gallus sp
09-775-932-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION NUMBER: US/10/264,049
CURRENT FILING DATE: 2002-10-04
PRIOR APPLICATION NUMBER: PCT/US01/18569
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SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                         NUMBER OF SEQ ID NOS:
                                                                                                                          PRIOR FILING DATE:
                                                                                                                                                                                                                                APPLICANT: Universi
TITLE OF INVENTION:
FILE REFERENCE: 580
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PRIOR APPLICATION NUMBER: US 60/209,467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILE REFERENCE: PA133P1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION NUMBER: 60/230,230 PRIOR FILING DATE: 2001-09-01
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ORGANISM: Homo sapiens
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                                                   116
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                                                                                     PatentIn Ver. 2.0
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                                                                                                                                                                                                                                                 University of British Columbia VENTION: Production and use of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
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100.0%; Pred. No. 2.3e-10;
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Pred. No. 0.00
6; Mismatches
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FILE REPERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 15
LENGTH: 80
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US-09-864-761-34822
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US-09-941-314-15
                                                                                PRIOR APPLICATION NUMBER: US 60/180,312
PRIOR FILING DATE: 2000-02-04
PRIOR PELLING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: US 60/207,456
PRIOR APPLICATION NUMBER: US 09/632,366
PRIOR APPLICATION NUMBER: US 09/632,366
PRIOR PILING DATE: 2000-08-03
PRIOR PILING DATE: 2000-09-02
PRIOR PILING DATE: 2000-09-02
PRIOR PILING DATE: 2001-01-30
PRIOR APPLICATION NUMBER: PCT/US01/00669
PRIOR APPLICATION NUMBER: PCT/US01/00669
PRIOR APPLICATION NUMBER: PCT/US01/00669
PRIOR PILING DATE: 2001-01-30
PRIOR APPLICATION NUMBER: PCT/US01/00668
PRIOR APPLICATION NUMBER: PCT/US01/00668
PRIOR APPLICATION NUMBER: PCT/US01/00669
PRIOR APPLICATION NUMBER: PCT/US01/00663
PRIOR APPLICATION NUMBER: PCT/US01/00663
PRIOR APPLICATION NUMBER: PCT/US01/00661
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Best Local :
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Patent No. US20020048763A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Penn, Sharron G. APPLICANT: Rank, David R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION NUMBER: US/09/864,761
CURRENT FILING DATE: 2001-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Hanzel, David K.
APPLICANT: Chen, Wensheng
TITLE OF INVENTION: HUMAN GENOME-DERIVED SINGLE EXON NUCLEIC ACID PROBES USEFUL FOR
TITLE OF INVENTION: GENE EXPRESSION ANALYSIS BY MICROARRAY
FILE REFERENCE: Acomica-X-1
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ITLE OF INVENTION: Mammalian Cystatin-8 and Its
ITLE OF INVENTION: Inhibit Cancer Procoagulant
FILING DATE: 2001-01-30
APPLICATION NUMBER: US 60/234,687
FILING DATE: 2000-09-21
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Hanzel, David K.
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; Pred. No. 8e-13;
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SEQ ID NO 34822
LENGTH: 50
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PRIOR FILING DATE: 2000-02-04
PRIOR APPLICATION NUMBER: US 60/207,456
PRIOR FILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: US 09/632,366
PRIOR FILING DATE: 2000-08-03
PRIOR APPLICATION NUMBER: GB 24263.6
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CURRENT FILING DATE: 2001-05-23
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APPLICANT: Rank, David R.
APPLICANT: Hanzel, David K
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PRIOR APPLICATION NUMBER: US 09/774,203
PRIOR FILING DATE: 2001-01-29
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OTHER INFORMATION:
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RER INFORMATION: EXPRESSED IN BONE MAI
ER INFORMATION: EXPRESSED IN LUNG, S:
ER INFORMATION: EXPRESSED IN BRAIN, SER INFORMATION: EXPRESSED IN FLACENTI
ER INFORMATION: EXPRESSED IN FLACENTI
ER INFORMATION: EXPRESSED IN FETAL L:
ER INFORMATION: EXPRESSED IN HEART, SER INFORMATION: EXPRESSED I
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APPLICATION NUMBER: US 60/236,359
                                                                                       FILING DATE: 2001-01-30
APPLICATION NUMBER: PCT/US01/00668
                                                                                                                                                                                                                                          APPLICATION NUMBER: PCT/US01/00669
                                                                                                                                                                                                                                                                                                                                             FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: PCT/US01/00667
                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: PCT/US01/00666
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                             FILING DATE:
APPLICATION
                                                                                                                                                                    APPLICATION NUMBER:
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Hanzel, David K.
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                                                                                                                                                                                                                                                                                                            NUMBER: PCT/US01/00664
                             NUMBER: PCT/US01/00663
2001-01-
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D IN PLACENTA, SIGNAL = 1.7

D IN ADULT LIVER, SIGNAL = 1

D IN FETAL LIVER, SIGNAL = 1

D IN BETA4, SIGNAL = 1.1

D IN HEART, SIGNAL = 1.5

D IN HELA, SIGNAL = 1.3

BD IN HELA, SIGNAL = 1.3

AN HIT: AIGNOST.1, EVALUE 5.
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Pred. No.
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FILE REFERENCE: 00-81PC

Query Match

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; ORGANISM: Homo sapiens US-09-941-314-3
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CURRENT FILING NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 8
LENGTH: 35
LENGTH: 35
                                                                                                                                                                                                                                                        GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
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                                                                                                                                                                                                                                                                                                                                                  Sequence 3, Application US/09941314 Patent No. US20020142396A1
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APPLICANT: ZymoGenetics, Inc.
                                                                                  SEQ ID NO 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
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                                                                                                                                               FILE REFERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
                                                                                                         NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
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                                           TYPE: PRT
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GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
APPLICANT: ZymoGenetics, Inc.
FITLE OF INVENTION: Mammalian Cystatin-8 and Its Use
FILE REFERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOPTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 2
LENGTH: 137
TYPE: PRT
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                                                                                                                             ; ORGANISM: Homo sapiens US-09-941-314-2
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CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 4
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APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
FILE REFERENCE: 00-81PC
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Patent No. US20020142396A1
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Best Local Similarity
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TYPE: PRT
ORGANISM: Homo sapiens
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                                                                         100.0%; Score 143; DB 9; 100.0%; Pred. No. 1.8e-13;
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Pred. No. 1.5e-13;
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US-09-941-314-15
; Sequence 15, Application US/09941314
; Patent No. US20020142396A1

RESULT 7

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Maximum Match 100%
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1: /cgn2_6/ptodata/2/pubpaa/US07_PUBCOMB.pep:*

2: /cgn2_6/ptodata/2/pubpaa/PCT_NEW_PUB.pep:*

3: /cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep:*

4: /cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep:*
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Copyright (c) 1993 - 2004 Compugen Ltd.
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/ Cgn2_6/ptodata/2/pubpaa/US08_PUBCOMB.pep: *
/ Cgn2_6/ptodata/2/pubpaa/US09E_PUBCOMB.pep: *
/ Cgn2_6/ptodata/2/pubpaa/US09E_PUBCOMB.pep: *
/ Cgn2_6/ptodata/2/pubpaa/US09E_PUBCOMB.pep: *
/ Cgn2_6/ptodata/2/pubpaa/US10E_PUBCOMB.pep: *
/ Cgn2_6/ptodata/2/pubpaa/US10E_PUB.pep: *
/ Cgn2_6/ptodata/2/pubpaa/US10E_PUB.pep: *
/ Cgn2_6/ptodata/2/pubpaa/US10E_PUB.pep: *
/ Cgn2_6/ptodata/2/pubpaa/US10E_PUB.pep: *
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US-09-941-314-8
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US-09-941-314-2
US-09-941-314-15
US-09-864-761-34822
US-09-864-761-48936
US-09-864-314-14
US-09-941-314-14
US-09-941-314-14
US-09-941-314-14
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US-09-775-932-8
US-08-849-303-15
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                                                  Sequence 9, Appli
Sequence 13, Appli
Sequence 13, Appli
Sequence 3, Appli
Sequence 4, Appli
Sequence 15, Appli
Sequence 15, Appli
Sequence 34822, A
Sequence 10, Appl
Sequence 10, Appl
Sequence 14, Appl
Sequence 14, Appl
                                                                                                                                                                                                                                                                                           Description
Sequence 16, Appl
Sequence 8, Appli
Sequence 15, Appl
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US-09-941-314-9

Sequence 9, Application US/09941314 Patent No. US20020142396A1

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equence 14	equence 7,	equence 5	e 22	e 21	e 6,	e 4,	δ,	7,	25,	e 14,	18, /	e 48	e 46, App	e 18,	19,	24,		2, Appl	e 2,	2	Sequence 47, Appl	e u	Ψ	ω	e 17,	e 2,	equence 6	e 24,	Sequence 4, Appli

ALIGNMENTS

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Best Local S
Matches 27
                                             Sequence 8, Application US/09941314
Patent No. US20020142396A1
GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
                                                                                                                                                                                    1 DQYNKESDDKYHFRIFRVLKVQRQVTD 27
                                                                                                                                                                                                                                Similarity 27; Conserv
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Pred. No. 3.2e-14
); Mismatches 0
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; TYPE: PRT; ORGANISM: Homo sapiens US-09-941-314-9

CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 9
LENGTH: 27
TYPE: TATE

GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its
TITLE OF INVENTION: Inhibit Cancer Procoagulant
FILE REFERENCE: 00-81PC

: Use to

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APPLICANT: TITLE OF II

Guo-Liang

Human Cystatin

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US-09-940-497-6
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                                                                                                                                                                                                                                              Sequence 6, Application US/09940497
Patent No. 6617132
                                                                                                                                                                           GENERAL INFORMATION:
APPLICANT: Ni et al.
TITLE OF INVENTION: Human Cystatin E
FILE REFERENCE: PF202P1D2
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PRIOR APPLICATION NUMBER: US 08/461,030 PRIOR FILING DATE: 1995-06-05 NUMBER OF SEQ ID NOS: 13 SOFTWARE: Patentin version 3.1
                                                                   PRIOR APPLICATION NUMBER: US 09/241,376
PRIOR FILING DATE: 1999-02-02
PRIOR APPLICATION NUMBER: US 08/744,138
PRIOR FILING DATE: 1996-11-05
                                                                                                                                      CURRENT APPLICATION NUMBER: US/09/940,497
CURRENT FILING DATE: 2001-08-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELECOMMUNICATION INFORMATION:
TELEPHONE: 301 309 8504
TELEFAX: 301 309 8512
INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/461,030
FILING DATE: 05-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/09/241,376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOLECULE TYPE:
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APPLICATION NUMBER:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: Brookes, A. Anders REGISTRATION NUMBER: 36, REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE: Human Genome Sciences, Inc. STREET: 9410 Key West Avenue CITY: Rockville
                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: amino acid
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Similarity 41.7%;
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Search completed: March 18, 2004, 14:25:36 Job time: 6.91071 secs
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US-08-849-303-24
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LENGTH: 141
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Best Local Similarity
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INFORMATION FOR SEQ ID NO:
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TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IEM PC compatible
COMPUTER: IEM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/849,303
                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 21-MAY-1997
CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: Jackson Esq., David A.
REGISTRATION NUMBER: 26,742
                                                                                                                                                                                                MOLECULE TYPE: HYPOTHETICAL:
                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
LENGTH: 141 amino acid
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TELECOMMUNICATION INFORMATION:
TELEPHONE: 201-487-5800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Urwin, Peter E.
TITLE OF INVENTION: MODIFIED PROTEINASE INHIBITORS
NUMBER OF SEQUENCES: 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS
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                                                                                                                                                                                                                                          TYPE: amino acid
STRANDEDNESS: si
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                                                                                                                       Conservative
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                                                                                                                                                                                              : protein
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; Pred. No. 0.00
9; Mismatches
                                                                                                                  Score 66; DB 4;
Pred. No. 0.0045;
9; Mismatches
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                                                                                                                       Indels
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; MOLECULE TYPE:
; HYPOTHETICAL:
US-08-849-303-15
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TELEPHONE: 415-855-0555
TELEFAX: 415-845-4166
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 139 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 15, App---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Patent No. 6680424
GENERAL INFORMATION:
APPLICANT: Atkinso
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                                                                                                              TELEX: 133521
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: PA PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
CURRENT APPLICATION DATA:
APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Atkinson, Howard J.
APPLICANT: McPherson, Michael J.
APPLICANT: Urwin, Peter E.
                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:
NAME: Jackson Esq., David A.
REGISTRATION NUMBER: 26,742
REFERENCE/DOCKET NUMBER: 1321-1-003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IMMEDIATE SOURCE:
LIBRARY: GenBa
CLONE: 118195
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APPLICATION NUMBER:
FILING DATE:
                                                                                                                                                                                                TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES: 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION: MODIFIED PROTEINASE INHIBITORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTORNEY/AGENT INFORMATION:
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REGISTRATION NUMBER: 36,749
REFERENCE/DOCKET NUMBER: PF.
                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: US/08/849,303 FILING DATE: 21-MAY-1997 CLASSIFICATION: 514
                                                                                                                                                                                TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CITY: Hackensack
STATE: New Jersey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STREET:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: amino acid
STRANDEDNESS: single
                                                              STRANDEDNESS:
                                                                              TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY:
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Similarity 45.8%;
11; Conservative
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                                                                                                139 amino acids
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                 protein
NO
                                                           single
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Pred. No. 0.0044;
7; Mismatches
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                                                                                                      RESULT 13
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                                                         Sequence 6, Application US/09241376
Patent No. 6300477
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Best Local (
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                                              GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: PM PC FOOS/MS-DOS
SOFTMARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION UMBER: US/08/744,138
FILING DATE:
CLASSIFICATION: 435
CLASSIFICATION: 435
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APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                           ORIGINAL SOURCE:
INDIVIDUAL ISOLATE:
                                                                                                                                                                                                                                                                                                       MOLECULE TYPE:
HYPOTHETICAL:
                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS:
LENGTH: 141 amino acid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Yu, Guo-Liang
TITLE OF INVENTION: Human Cystatin B
NUMBER OF SEQUENCES: 13
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTORNEY/AGENT INFORMATION:
                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                LENGTH: 141 amino acids TYPE: amino acid STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: Brookes, A. Anders REGISTRATION NUMBER: 36, REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CITY: Rockville
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET:
                                                                                                                                                                                                                   Local
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                                                                                                                                                                                                                                                                                                                                    TOPOLOGY:
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                                                                                                                                                                                                    al Similarity
10; Conserv
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                                                                                                                                              54 EYNKATEDEYYRRLLRVLRAREQI 77
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                                                                                                                                                                2 QYNKESDDKYHFRIFRVLKVQRQV 25
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Gentz, Reiner L.
Ni, Jian
Rosen, Craig A.
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Ni, Jian
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Pred. No. 0.0044;
                                                                                                                                                                                                    Score 66; DB 3;
Pred. No. 0.0045
9; Mismatches
                                                                                                                                                                                                                                    DB 3;
                                                                                                                                                                                                                                  Length 141;
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APPLICANT:

NUMBER OF SEQUENCES:

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US-09-775-932-8
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILE REFERENCE: 58069
CURRENT APPLICATION NUMBER: US/09/775,932
CURRENT FILING DATE: 2001-02-02
PRIOR APPLICATION NUMBER: CA99/00717
PRIOR FILING DATE: 1999-08-05
PRIOR APPLICATION NUMBER: 60/095,503
PRIOR FILING DATE: 1998-08-05
NUMBER OF SEQ ID NOS: 32
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Sequence 4, Application US/08791522
patent No. 5935817
GENERAL INFORMATION:
APPLICANT: Bandman, Olga
APPLICANT: Goli, Surya K.
TITLE OF INVENTION: NOVEL HUMAN CYSTATIN-LIKE
TITLE OF INVENTION: PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE:
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Patent No. 6534477
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                               Query Match 46.2%;
Best Local Similarity 41.7%;
Matches 10; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: University of British Columbia TITLE OF INVENTION: Production and use of Modified Cystatins FILE REFERENCE: 58069
CURRENT APPLICATION NUMBER: US/09/775,932
CURRENT FILING DATE: 2001-02-02
PRIOR APPLICATION NUMBER: CA99/00717
PRIOR APPLICATION NUMBER: CA99/00717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 121
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Similarity 45.8%;
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VENTION: Production and use of Modified Cystatins
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Pred. No. 0.0037;
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Pred. No. 0.0036;
                                                                                                                                                                                                                                                                                                                                        DB 4; Length 121;
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                                                                                                                                                                                                                                       GENERAL INFORMATION:
APPLICANT: Bandman, Olga
APPLICANT: Goll, Surya K.
TITLE OF INVENTION: NOVEL HUM
TITLE OF INVENTION: PROTEIN
NUMBER OF SEQUENCES: 4
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                            Sequence 4, Application US/09314777 Patent No. 6110686
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           COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/314,777
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: US/08/79
FILING DATE: Filed Herewith
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                            COMPUTER READABLE FORM: MEDIUM TYPE: Diskett
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LENGTH: 139 amino acid
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ATTORNEY/AGENT INFORMATION:
NAME: Billings, Lucy J.
REGISTRATION NUMBER: 36,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version
CURRENT APPLICATION DATA:
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MEDIUM TYPE: Diskett
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                                                                                                                                            COUNTRY: US
ZIP: 94304
                                                                                                                                                                                       STREET: 3174 POI
CITY: Palo Alto
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Local Similarity 45.8%;
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CITY: Palo Alto
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STRANDEDNESS:
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CLASSIFICATION:
                                                                                                                                                                                                           ADDRESSEE: Incyte Pharmaceuticals, Inc
STREET: 3174 Porter Drive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEPHONE:
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3174 Porter Drive
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NOVEL HUMAN CYSTATIN-LIKE
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Pred. No. 0.0044;
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; SEQ ID NO 4
; LENGTH: 142
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-617-302-4
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; ORGANISM: Homo sapiens
US-09-617-302-2
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SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 4
                                                                                                                                                                                                                                                                                                                                                                                        Sequence 4, Application US/09617302 Patent No. 6245529
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Best Local Similarity
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                                                                                                                 PRIOR APPLICATION NUMBER: 60/156,382
PRIOR FILING DATE: 1999-09-28
NUMBER OF CT.
                                                                                                                                                                                                      FILE REFERENCE: 98-72 C1
CURRENT APPLICATION NUMBER: US/09/617,302
CURRENT FILING DATE: 2000-07-17
PRIOR APPLICATION NUMBER: 09/431,480
PRIOR FILING DATE: 1999-11-01
PRIOR FILING DATE: 1999-11-01
                                                                                                                                                                                                                                                                                                       APPLICANT: Holloway, James L.
APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN
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EARLIER APPLICATION NUMBER: 60/156,382
EARLIER FILING DATE: 1999-09-28
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CURRENT APPLICATION NUMBER: US/09/431,480
CURRENT FILING DATE: 1999-11-01
EARLIER APPLICATION NUMBER: 60/109,217
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APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN T
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Local Similarity 53.8%;
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                                                                                             FastSEQ for Windows Version 3.0
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Pred. No. 8.1e-05;
6; Mismatches 6
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Pred. No. 1.9e-05
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CURRENT APPLICATION NUMBER: US/09/617,302
CURRENT FILING DATE: 2000-07-17
PRIOR APPLICATION NUMBER: 09/431,480
PRIOR FILING DATE: 1999-11-01
PRIOR APPLICATION NUMBER: 60/109,217
PRIOR APPLICATION NUMBER: 60/109,217
PRIOR PRILING DATE: 1998-11-20
PRIOR APPLICATION NUMBER: 60/156,382
PRIOR FILING DATE: 1999-09-28
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SEQ ID NO 3
LENGTH: 142
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EARLIER FILING DATE: 1999-09-28
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 3
LENGTH: 142
                                                  Matches
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APPLICANT: Holloway, James L.
APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN
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                                                                                   Query Match
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APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN
FILE REFERENCE: 98-72
CURRENT APPLICATION NUMBER: US/09/431,480
CURRENT FILING DATE: 1999-11-01
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EARLIER FILING DATE: 1998-11-20
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Pred. No. 8.1e-05;
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
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Issued_Patents_AA:*
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/cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
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GenCore version 5.1.6 (c) 1993 - 2004 Compugen Ltd
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US-08-911-522-4
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US-08-849-303-15
US-08-849-303-24
US-09-241-376-6
US-09-940-497-6
US-09-940-497-6
US-09-932-2
5432264-4
US-09-731-525-3
US-08-832-535-11
US-08-832-535-11
US-08-744-138-3
US-09-314-777-3
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US-09-314-400-6
US-09-241-302-6
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TYPE: PRT
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Sequence 7, Appli	Sequence 1, Appli	Sequence 25, Appl	Sequence 18, Appl	Sequence 18, Appl	•	Sequence 46, Appl	e 5,	Sequence 5, Appli	~	Sequence 24, Appl		Sequence 4, Appli	Patent No. 5432264	Sequence 9, Appli	Sequence 17, Appl	Sequence 37, Appl	Sequence 3, Appli

ALIGNMENTS

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APPLICANT: HOLLOWS, James L.

APPLICANT: Feldhaus, Andrew

ITITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PRO

FILE REFERENCE: 98-72

CURRENT APPLICATION NUMBER: US/09/431,480

CURRENT FILING DATE: 1999-11-01

EARLIER APPLICATION NUMBER: 60/109,217

EARLIER APPLICATION NUMBER: 60/109,217

EARLIER FILING DATE: 1998-11-20

EARLIER FILING DATE: 1998-9-28

NUMBER OF SEQ ID NOS: 22

SOFTWARE: FastSEQ for Windows Version 3.0

SEQ ID NO 2
FILE REFERENCE: 98-72 C1
CURRENT APPLICATION NUMBER: US/09/617,302
CURRENT FILING DATE: 2000-07-17
PRIOR APPLICATION NUMBER: 09/431,480
PRIOR FILING DATE: 1999-11-01
PRIOR APPLICATION NUMBER: 60/109,217
PRIOR APPLICATION NUMBER: 60/109,217
PRIOR FILING DATE: 1998-11-20
PRIOR FILING DATE: 1998-18-60/156,382
PRIOR FILING DATE: 1999-09-28
NUMBER OF SEQ ID NOS: 22
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Patent No. 6245529
GENERAL INFORMATION:
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APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN
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Pred. No. 1:9e-05;
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26-MAY-2000; 2000US-0207456P.
30-JUN-2000; 2000US-00608408.
03-AUG-2000; 2000US-00632366.
21-SEP-2000; 2000US-0234687P.
27-SEP-2000; 2000US-0234635P.
04-OCT-2000; 2000GB-00024263.
                                                                                                                                                                                                                                                                                                                   The present invention provides a number of single exon nucleic acid probes which are derived from genomic sequences expressed in the human brain. They can be used to measure gene expression in brain cell samples, which may enable the diagnosis and improved treatment of nervous system diseases such as Alzheimer's disease, multiple sclerosis, schizophrenia, epilepsy and cancers. The present sequence is a protein encoded by one of the probes of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Example 4; SEQ ID NO 26976; 650pp + Sequence Listing; English.
                                                                                                                                                                                                                                                          Sequence 50 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Single exon nucleic acid probes for analyzing gene expression in human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2001-483446/52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Penn SG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       09-AUG-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200157275-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human; brain expressed exon; gene expression analysis; probe; microarray; Alzheimer's disease; multiple sclerosis; schizophrenia; epilepsy; cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30-JAN-2001; 2001WO-US000667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human brain expressed single exon probe encoded protein SEQ ID NO: 26976.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               05-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAM54871;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAM54871 standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (MOLE-) MOLECULAR DYNAMICS INC.
          27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ch 89.5%; Score 128; DB 4; 1 1 Similarity 100.0%; Pred. No. 2.9e-12; 24; Conservative 0; Mismatches 0;
Hanzel DK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Chen W,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rank DR;
                                                                                                                                                                                           Length 50;
                                                                                                                                  Indels
                                                                                                                                  0
                                                                                                                                  Gaps
                                                                                                                                  0
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Search completed: March 18, 2004, 14:14:59 Job time : 24.4821 secs

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RESULT 13
ABB19524
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Best Local S
Matches 24
                                                                                                                                                                                                                                                                                                                                                                          26-MAY-2000;
30-JUN-2000;
03-AUG-2000;
Single exon nucleic acid probes for analyzing gene expression in human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              04-FEB-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30-JAN-2001; 2001WO-US000666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human; gene expression; heart; microarray; vascular system; cardiovascular disease; hypertension; cardiac arrhythmia;
                                                                                                                                         Penn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 09-AUG-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200157274-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               congenital
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABB19524 standard; protein; 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 50
                                                                                                                                                                                                                                                                                                            27-SEP-2000;
                                                                                                                                                                                                                                                                                                                                                  21-SEP-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABB19524;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                         နှင့်
                                                                        2001-488899/53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 DQYNKESDDKYHFRIFRVLKVQRQ 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              #1523 encoded by probe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                           MOLECULAR DYNAMICS INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOYNKESDDKYHFRIFRVLKVORO 50
                                                                                                                                   Hanzel DK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  heart disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ž,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                         2000US-0234687P.
2000US-0236359P.
2000GB-00024263.
                                                                                                                                                                                                                                                                                                                                                                      2000US-0207456P.
2000US-00608408.
2000US-00632366.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    probes for measuring gene expression in a sample derived
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2000US-0180312P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   89.5%;
                                                                                                                                      Chen W,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 128;
Pred. No.
                                                                                                                                         Rank DR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              for measuring heart cell gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2.9e-12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 50
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The present invention relates to single exon nucleic acid probes for measuring human gene expression in a sample derived from human heart ABA21535-ABA41305). The present sequence is a protein encoded by one

such (вее

Query Match Best Local Matches

l Similarity 24; Conserv

Conservative

<u>.</u>

Mismatches

Indels

0,

Gaps

0

89.5%;

Score 128; Pred. No.

N

DB 4; .9e-1

Length 50

Sequence 50 AA;

SEQ ID NO 21294; 530pp; English.

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RESULT 14
AAM67252
ID AAM677252
XX AAM677252
AC AAM677
XX AAM677
XX Human
XX Human
XX Human
XX M micro
OS Homo
XX M micro
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Matches
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30-JUN-2000; 2000US-00608408.
03-AUG-2000; 2000US-032366.
21-SEP-2000; 2000US-0234687P.
27-SEP-2000; 2000US-0236359P.
04-OCT-2000; 2000GB-00024263.
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                                                      The present invention provides a number of single exon nucleic acid probes which are derived from genomic sequences expressed in the human bone marrow. They can be used to measure gene expression in bone marrow samples, which may enable the improved diagnosis and treatment of cancers such as lymphoma, leukaemia and myeloma. The present sequence is a protein encoded by one of the probes of the invention
                                                                                                                                                                                                                                                                                                                                                       Human genome-derived single exon nucleic acid probes useful for analyzing
                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2001-488900/53.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       04-FEB-2000; 2000US-0180312P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-JAN-2001; 2001WO-US000668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              09-AUG-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              microarray; cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human; bone marrow expressed exon; microarray; cancer; leukaemia; lymg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human bone marrow expressed probe encoded protein
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAM67252 standard; protein;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         at ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                  Example 4; SEQ ID NO 27558; 658pp + Sequence Listing; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200157276-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                           expression in human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULAR DYNAMICS INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hanzel DK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Chen W,
                                                                                                                                                                                                                                                                                                                              bone
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Pred. No.
                                                                                                                                                                                                                                                                                                                                 marrow.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rank DR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  con; gene expression analysis; probe;
lymphoma; myeloma.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2.9e-1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
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Matches
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                                                                                                                                       04-FEB-2000; 2000US-0180312P.
26-MAY-2000; 2000US-0207456P.
30-JUN-2000; 2000US-00608408.
03-AUG-2000; 2000US-00632366.
21-SEP-2000; 2000US-0234687P.
27-SEP-2000; 2000US-02345359P.
04-OCT-2000; 2000GB-00024263.
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27-SEP-2000;
04-OCT-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The present invention relates to single exon nucleic acid probes (SENP: see AAI31315-AAI57546). The present sequence is a peptide encoded by one such probe. The probes are useful for producing a microarray for predicting, measuring and displaying gene expression in samples derived from human placenta. The probes are useful for antenatal diagnosis of human genetic disorders
                      New spatially-addressable set of single exon nucleic for measuring gene expression in sample derived from comprises number of single exon nucleic acid probes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human genome-derived single exon nucleic acid probes useful for analyzing gene expression in human placenta.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI;
                                                                      WPI; 2001-496933/54.
                                                                                                                                                                                                                                    30-JAN-2001; 2001WO-US000662
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                                                                                                                                                                                                                                                                                                                                            Human;
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                                                                                                                   (MOLE-)
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                                                                                                                                                                                                                                                                                                                                         microarray; single exon probe; gene expression; breast; disease;
                                                                                                                  MOLECULAR DYNAMICS INC.
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2000US-0236359P.
2000GB-00024263.
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100.0%; Pred. No. 2.:
tive 0; Mismatches
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Claim 27; SEQ ID NO 15357; 327pp + Sequence Listing; English.

The invention relates to a spatially-addressable set of single exon

Claim 27; SEQ ID NO 11881; 327pp + Sequence Listing; English.

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Best Local Similarity
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26-MAY-2000; 2000US-0207456P.
30-JUN-2000; 2000US-00608408.
03-AUG-2000; 2000US-00632366.
21-SEP-2000; 2000US-0234687P.
27-SEP-2000; 2000US-0234535P.
04-OCT-2000; 2000GB-00024263.
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                                                                                                                  New spatially-addressable set of single exon nucleic for measuring gene expression in sample derived from comprises number of single exon nucleic acid probes.
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                                                                                                                                                     acid probes, useful human breast,
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RESULT 8
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26-MAY-2000; 2000US-0207456P.
30-JUN-2000; 2000US-00608408.
03-AUG-2000; 2000US-00632366.
21-SEP-2000; 2000US-0234687P.
27-SEP-2000; 2000US-02345359.
04-OCT-2000; 2000GB-00024263.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The present invention relates to human single exon nucleic acid probes (SENP: see AAI10068-AAI28459). The present sequence is a peptide encoded by one such probe. The SENPs are derived from human HeLa cells. The SENPs can be used to produce a single exon microarray, which can be used for measuring human gene expression in a sample derived from human cervical epithelial cells. By measuring gene expression, the probes are therefore useful in grading and/or staging of diseases of the cervix, notably cervical cancer. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences
  Human; foetal liver; gene expression; single exon nucleic acid probe.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human genome-derived single exon nucleic acid probes useful for analyzing gene expression in human cervical epithelial cells.
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                                                       Peptide #1592
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                                                                                                                                                                                                                       ABB34086 standard;
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                                                  encoded by human foetal liver single exon probe.
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100.0%; Pr
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RESULT 10
AAM27545
ID AAM27545
XX
XX AC AAM2:
XX Pep
XX Pep
XX Pr
KW Pr
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XX Hr
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Matches
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26-MAY-2000; 2000US-0207456P.
30-UUN-2000; 2000US-00608408.
03-AUG-2000; 2000US-00632366.
21-SEP-2000; 2000US-023687P.
27-SEP-2000; 2000US-0236359P.
04-OCT-2000; 2000GB-00024263.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The invention relates to a single exon nucleic acid probe for measuring human gene expression in a sample derived from human foetal liver. The single exon nucleic acid probes may be used for predicting, measuring and displaying gene expression in samples derived from human fetal liver. The present sequence is a peptide encoded by a single exon nucleic acid probe of the invention. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences
 04-FEB-2000; 2000US-0180312P.
26-MAY-2000; 2000US-0207456P.
30-JUN-2000; 2000US-00608408.
03-AUG-2000; 2000US-00632366.
                                                                30-JAN-2001; 2001WO-US000663
                                                                                                                                                                     genetic disorder.
                                                                                                                                                                                                                                                            AAM27545;
                                                                                                                                                                                                                                                                                   AAM27545 standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 50 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                         09-AUG-2001.
                                                                                                                                          Homo sapiens
                                                                                                                                                                                                         Peptide #1582 encoded by probe for measuring placental gene expression.
                                                                                                                                                                                                                                   17-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 27; SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2001-483447/52.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30-JAN-2001; 2001WO-US000669
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                                                                                                                   WO200157272-A2
                                                                                                                                                                                 Probe; microarray;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Penn
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                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
mes 24; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     n genome-derived single exon nucleic expression in human fetal liver.
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                                                                                                                                                                                                                                                                                                                                                                   1 DQYNKESDDKYHFRIFRVLKVQRQ 24
                                                                                                                                                                                                                                                                                                                                                  DOYNKESDOKYHFRIFRVLKVORO 50
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                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                  (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NO 26721; 639pp + Sequence Listing;
                                                                                                                                                                               human; placenta;
                                                                                                                                                                                                                                                                                                                                                                                                               100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                            89.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Chen W,
                                                                                                                                                                                                                                                                                     50
                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                              Score 128;
Pred. No.
                                                                                                                                                                                                                                                                                     A
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                                                                                                                                                                                  antenatal
                                                                                                                                                                                                                                                                                                                                                                                                                2.9e-i
                                                                                                                                                                                                                                                                                                                                                                                                                            DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 acid probes useful
                                                                                                                                                                                                                                                                                                                                                                                                                         Length 50;
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RESULT 6
AAU79852
ID 7852
ID 7
5
                                                                                                                                                                                                                                                             CC polypeptide (I). (I) is useful for: inhibiting cancer proceadulant CC protein in an individual and thus inhibiting cancer proceadulant CC associated with cancer; promoting spermatogenesis, modulating seminal CC fluid viscosity, enhancing viability of cryopreserved sperm, sperm CC motility and fertilisation; and as antigenic peptides to generate CC antibodies. Zcys8 is useful as research reagent for characterising sites CC of interaction between Zcys8 and its receptor. Zcys8 is useful in CC enhancing fertilisation during assisted reproduction in humans and in CC animals. Anti-(I) antibodies are useful to screen biological samples like CC presence of Zcys8. The antibodies are useful to screen biological samples like CC presence of Zcys8 protein and DNA sequences that encode Zcys8 genes. CC The polynucleotide encoding (I) is useful to detect and to localise the CC oligonucleotide probes are useful for in vivo diagnosis. The CC polynucleotide probes are useful for in vivo diagnosis. The CC polynucleotide encoding (I) is useful the determining whether a subject's chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes and CC rearrangements and genetic alterations that inactivate the Zcys8 gene.
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                                                              Matches
                                                                                            Query Match
Best Local !
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation.
                                                                                                                                                                                 Sequence 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The invention describes an isolated mammalian cystatin-8 (Zcys8)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2002-383044/41.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-SEP-2000; 2000US-0230230P
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14-MAR-2002.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15-JUL-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAU79852 standard; protein; 137 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (ZYMO ) ZYMOGENETICS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2; Page 93-94; 100pp; English.
                                                       1 Similarity
27; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   32
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1 DQYNKESDDKYHFRIFRVLKVQRQVTD 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 DQYNKESDDKYHFRIFRVLKVQRQVTD 27
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                                                                                                                                                                                                                                         acid sequence
                                                                                        100.0%; Score 143; DB 5; 100.0%; Pred. No. 4.4e-14;
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                                                           <u>,</u>
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                                                                                                                                                                                                                                            of human cystatin-8
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                                                                                                                   Length 137;
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                                                           Indels
                                                                                                                                                                                                                                               (Zcys8)
                                                       0,
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                                                       Gaps
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밁 5

QYNKESDDKYHFRIFRVLKVQRQVTD QYNKESDDKYHFRI FRVLKVQRQVTD

N

Query Match Best Local Matches

Similarity

95.8%;

Score 137; Pred. No.

DB 5; 2e-13;

Length 80 Indels

Conservative

0

Mismatches 27

0

Gaps

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RRESULT 7
AAUT9685
ID AAUT97
XX AAUT97
XX AAUT97
XX AAUT97
XX Cyst Huma
XXX Sper
XX Sper
XX Sper
XX WO20
XX WO20
XX WO20
XX WO21
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XX C1-S
XX WPI;
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                                                                                                                                                                                                                                                                                                                                                                                          polypeptide (I). (I) is useful for: inhibiting cancer procoagulant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm motility and fertilisation; and as antigenic peptides to generate antibodies. Zcys8 is useful as research reagent for characterising sites of interaction between Zcys8 and its receptor. Zcys8 is useful in enhancing fertilisation during assisted reproduction in humans and in animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcys8. The antibodies are also useful to isolate large
                                                                                                   quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes. The polynucleotide encoding (I) is useful to detect and to localise the expression of a Zcys8 gene in a biological sample and Zcys8 colligonucleotide probes are useful for in vivo diagnosis. The polynucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zcys8 gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
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   Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 2; Page 98; 100pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2002-383044/41.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-SEP-2000; 2000US-0230230P
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human cystatin-8
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             spermatogenesis;
                                                                        This sequence represents an antigenic peptide of human cystatin-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (ZYMO ) ZYMOGENETICS INC.
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RESULT 4
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                                                                                                                                 animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcys8. The antibodies are also useful to isolate large quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes. The polynucleotide encoding (I) is useful to detect and to localise the expression of a Zcys8 gene in a biological sample and Zcys8 oligonucleotide probes are useful for in vivo diagnosis. The polynucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a nutation in the Zcys8 gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zcys8 gene.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The invention describes an isolated mammalian cystatin-8 (Zcys8)
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Pred. No. 1.4e-14;
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Sequence 115 AA

represents an

antigenic

fragment of

human

Query Match Best Local Similarity

100.0%;

Score 143; DB 5; Pred. No. 3.7e-14;

Length 117;

Sequence 117

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RESULT 5
AAU79854
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                                        CC protein in an individual and thus inhibiting the thrombotic events of associated with cancer; promoting spermatogenesis, modulating seminal cc fluid viscosity, enhancing viability of cryopreserved sperm, sperm cc motility and fertilisation; and as antigenic peptides to generate antibodies. Zcys8 is useful as research reagent for characterising sites co finteraction between Zcys8 and its receptor. Zcys8 is useful in cc enhancing fertilisation during assisted reproduction in humans and in cc animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcys8 protein and DNA sequences that encode Zcys8 genes. Cc The polynucleotide encoding (I) is useful to detect and to localise the caypression of a Zcys8 gene in a biological sample and Zcys8 genes. Cc chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes and crarrangements and genetic alterations that inactivate the Zcys8 gene. Cc This sequence represents an antigenic fragment of human cystatin-8 cc (Zcys8)
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RESULT 2
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CC The invention describes an isolated mammalian cystatin-8 (Zcys8)
CC polypeptide (I). (I) is useful for: inhibiting cancer procoagulant
CC protein in an individual and thus inhibiting the thrombotic events
CC associated with cancer; promoting spermatogenesis, modulating seminal
CC fluid viscosity, enhancing viability of cryopreserved sperm, sperm
CC motility and ferrilisation; and as antigenic peptides to generate
CC antibodies Zcys8 is useful as research reagent for characterising sites
CC of interaction between Zcys8 and its receptor. Zcys8 is useful in
CC enhancing fertilisation during assisted reproduction in humans and in
CC enhancing fertilisation during assisted reproduction in humans and in
CC enimals. Anti-(I) antibodies are useful to score biological samples like
CC presence of Zcys8. The antibodies are also useful to isolate large
CC quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes.
CC The polynucleotide encoding (I) is useful to detect and to localise the
CC coligonucleotide probes are useful for in vivo diagnosis. The
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                     cc protein in an individual and thus inhibiting the thrombotic events cassociated with cancer; promoting spermatogenesis, modulating seminal cf fluid viscosity, enhancing viability of cryopreserved sperm, sperm cc motility and fertilisation; and as antigenic peptides to generate antibodies. Zcys8 is useful as research reagent for characterising sites cof interaction between Zcys8 and its receptor. Zcys8 is useful in cc enhancing fertilisation during assisted reproduction in humans and in can minals. Anti-(I) antibodies are useful to screen biological samples like clood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcys8. The antibodies are also useful to isolate large quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes. Cc the polynucleotide encoding (I) is useful to detect and to localise the colligonucleotide encoding (I) is useful to detect and to localise the colligonucleotide encoding (I) is useful in detectmining whether a subject's chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes and
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation; antigenic peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 2; Page 97-98; 100pp; English.
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I) (I) is useful for: inhibiting cancer procoagulant individual and thus inhibiting the thrombotic events
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ALIGNMENTS

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29-AUG-2001; 2001WO-US026868.
                                                                                                                                                                                                                Homo sapiens.
                                                                                                                                                                                                                            Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation; antigenic peptide.
                                                                                                                                                                                                                                                      Human cystatin-8 (Zcys8) antigenic fragment #7.
                                                                                                                                                                                                                                                                   15-JUL-2002
                                                                                                                                                                                                                                                                                AAU79859;
                                                                                                                                                                                                                                                                                           AAU79859 standard; peptide;
                                                                                                                                                              01-SEP-2000; 2000US-0230230P
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                                                                                                                                                  (ZYMO ) ZYMOGENETICS INC.
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The invention describes an isolated mammalian cystatin-8 (Zcys8) polypeptide (I). (I) is useful for: inhibiting cancer procoagulant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm motility and fertilisation; and as antigenic peptides to generate antibodies. Zcys8 is useful as research reagent for characterising sites of interaction between Zcys8 and its receptor. Zcys8 is useful in enhancing fertilisation during assisted reproduction in humans and in animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcys8. The antibodies are also useful to isolate large Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer. Claim 2; Page 96; 100pp; English.

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080389
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Query Match
Best Local Similarity
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Best Local (
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01-OCT-2003 (TrEMBLrel. 25, Last a.....
Fetuin long form.
Cyprinus carpio (Common carp).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Actinopterygii, Neopterygii; Teleostei; Ostariophysi; Cypriniformes; Actinopteryginus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         080389;
01-NOV-1998;
01-NOV-1998;
01-JUN-2003;
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Q801Z5;
01-JUN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-NOV-1998 (TrEMBLrel. 08, Created)
01-NOV-1998 (TrEMBLrel. 08, Last sequence update)
01-JUN-2003 (TrEMBLel. 24, Last annotation update)
Cystein proteinase inhibitor.
Cucumis sativus (Cucumber).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; endicotyledons; core eudicots; rosids;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tsai P. L., Chang G.-D., Huang C.-J.;
"purification and cloning of carp febuin.";
"purification and cloning of carp febuin.";
Submitted (JAN-2003) to the EMBL/GenBank/DDBJ databases.
EMBL; AY225965; AAO74862.1;
-.
GO; GO:0005874; C:microtubule; IEA.
GO; GO:0004869; F:cysteine professe inhibitor activity; IEA.
GO; GO:0005198; F:structural molecule activity; IEA.
GO; GO:000718; P:microtubule-based movement; IEA.
                                                                                                                        SEQUENCE
                                                                                                                                                                                                   Pfam; PF00031; cystatin; 1. SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                             "Cystein proteinase inhibitor.";
Submitted (MAY-1998) to the EMBL/GenBank/DDBJ databases
EMBL; AB014760; BAA28867.1; -.
PIR; T07822; T07822.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
PROSITE; PS00228; TUBULIN_B AUTOREG; 1.
SEQUENCE 464 AA; 51698 MW; 7A54F71E
                                                                                                                                                                                                                                                                                  GO; GO:0004869; F:cysteine protease InterPro; IPR000010; Cystatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              eurosids I;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=3659;
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InterPro; IPR000010; Cystatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (amakawa S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           158 ESVKTALQKFNKESDHKSYFKLMEVGRISTQ 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10;
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                                                                                                                    PS00287; CYSTATIN; 1.
96 AA; 10973 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Cucurbitales;
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    29.9%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Cucurbitaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10;
    Score 56; DB
Pred. No. 3.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                        027252E14BB6C4F4 CRC64;
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                                                                                                                                                                                                                                                                                                                        activity; IEA
                                     Length 96;
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Search completed: March 18, Job time: 21.9722 secs

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Q9TY65;
01-MAY-2000
                                                                                               PROSITE; PS00287; CYSTATIN; 1.
NON TER 1 1
SEQUENCE 109 AA; 12701 MW;
                                                                                                                                       Pfam; PF00031; cystatin; 1. SMART; SM00043; CY; 1.
                                                                                                                                                                                                  antigens in microfiladermia positiv
Province, Ecuador.";
Parasite Immunol. 16:201-209(1994).
                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Nematoda; Chromadorea; Spirurida; Onchocercidae; Onchocerca.
                                                                                                                                                                                                                                                                                                                                                             01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-UN-2003 (TrEMBLrel. 24, Last annotation update)
Antigen maltose binding protein (Fragment).
                                                                                                                                                                GO; GO:0004869; F:cysteine protease inhibitor activity; IEA
InterPro; IPR000010; Cystatin.
                                                                                                                                                                                                                                                       Bradley J.E.
                                                                                                                                                                                                                                                              MEDLINE=94336252; PubMed=8058358;
Trenholme K.R., Tree T.I., Gillespie A.J., Guderian R., Maizels R.M.,
                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                        Onchocerca volvulus.
                                                                                                                                                                                                                                                                                                                NCBI_TaxID=6282;
                                                                                                                                                                                       EMBL; S71364; AAC60509.1;
                                                                                                                                                                                                                           "Heterogeneity of IgG antibody responses to cloned Onchocerca volvulus antigens in microfiladermia positive individuals from Esmeraldas
24
              12 NKESDDKYHFRIFRVLKVQRQV 33
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                                                            Similarity
NEOSNDEYHLMPIKLLKVSSQV 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KDSLQWITDQYNKESDDKYHFRIFRVLKVQRQV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KDIAEWAVAEYNKSQG--HHLTLVSILKCESQV 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                         29.9%;
                                             Score 56; DB Pred. No. 3.7; 6; Mismatches
                                               6
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MEDLINE-22255708; PubMed=1236880;

Hall N., Pain A., Berriman M., Churcher C., Harris B., Harris Hall N., Pain A., Berriman M., Churcher S., Barron A., Brooks K.,

Buckee C.O., Burrows C., Cherevach I., Chillingworth C.,

Chillingworth T., Christodoulou Z., Clark L., Clark R., Corton C.,

Cronin A., Davies R., Davis P., Dear P., Dearden F., Doggett J.,

Feltwell T., Goble A., Goodhead I., Gwilliam R., Hamlin N., Hance Z.,

Harper D., Hauser H., Hornsby T., Holroyd S., Horrocks P.,

"""mnhrav S., Jagels K., James K.D., Johnson D., Kerhornou A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q8I2K6;
Q8I2K6;
01-MAR-2003
01-MAR-2003
01-OCT-2003
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Q9NH95;
Q1-OCT-2000
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VARIANT
VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pfaff A.W., Hoffmann W.H., Taylor D.W., Schulz-Key H.;
"Characterization and immunological properties of a cystein protease
inhibitor of the filarial parasite Litomosoides sigmodontis.";
Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
EMBL; AF229173; AAF35896.1; -.
EMBL; AF229173; AAF35896.1; -.
EMBL; AF229173; F:cysteine protease inhibitor activity; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                              Plasmodium falciparum 
Eukaryota; Alveolata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Litomosoides sigmodontis.
Eukaryota; Metazoa; Nematoda;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-OCT-2000
01-JUN-2003
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hypothetical
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ALDFAVSEYNKGSNDAYHSRAIQVVRARKQL 76
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(TrEMBLrel.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protein.
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16
84
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                                                                                                                                                                                                                                                                                                                                                                                                                                                  (isolate 3D7).

Apicomplexa; Haemosporida; Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MW;
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Last sequence update)
Last annotation update)
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Last annotation updat
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L -> F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 67;
Pred. No.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
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RESULT 12
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GO; GO:0016984; F:ribulose-bisphosphate
GO; GO:0003743; F:translation initiatic
GO; GO:0005215; F:transporter activity
GO; GO:0005215; P:transporter activity
GO; GO:0006810; P:translational initia
GO; GO:0006413; P:translational initia
R GO; GO:0006810; P:transport; IEA.
R InterPro; IPR000408; Reg chr condens.
InterPro; IPR000685; RuBisCO_large.
InterPro; IPR000685; RuBisCO_large.
InterPro; IPR001950; TIF_SUI1.
InterPro; IPR001950; TIF_SUI1.
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Best Local
Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                   O16159;
01-JAN-1998 (TrEMBLrel. 05,
01-JAN-1998 (TrEMBLrel. 05,
01-JUN-2003 (TrEMBLrel. 24,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Knights A., Konfortov B., Kyes S., Larke N., Lawson D., Lennard Line A., Maddison M., Mclean J., Mooney P., Moule S., Murphy L. Oliver K., Ormond D., Price C., Quail M.A., Rabbinowitsch B., Rajandream M.A., Rutter S., Rutherford K.M., Sanders M., Simmon Seeger K., Sharp S., Smith R., Squares R., Squares S., Stevens Taylor K., Tivey A., Unwin L., Whitehead S., Woodward J., Sulston J.E., Craig A., Newbold C., Barrell B.G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PROSITE; PS0012; RCC1 3; 1.

PROSITE; PS00157; RUBISCO LARGE; 1.

PROSITE; PS01137; SBP BACTERIAL 1;

PROSITE; PS01118; SUIT 1; 1.
                                                                                                Eukaryota; Metazoa; Ne Onchocercidae; Brugia.
                                                                                                                                                                                                                                                                                                                                Brugia malayi (Filarial nematode worm).
Eukaryota; Metazoa; Nematoda; Chromadorea; Spirurida; Filarioidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     016159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hypothetical
SEQUENCE 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nature 419:527-531(2002).
EMBL; AL929358; CAD51986.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sulston J.E., Craig A., Newbold C., Barrell B.C "Sequence of Plasmodium falciparum chromosomes
                                                       Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
PROSITE; PS00287; CYSTATIN;
                                                                                                                                                                                                                                             Gregory W.F., Blaxte
Submitted (JUL-1997)
                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                 BM-CPI-2
                                                                                                                                                                                                                                                                                                                                                                             Cystatin-type
                                                                                                                                                                                                     Gregory W.F., Maizels R.M.;
                                                                                                                                                                                                                                                                                                   NCBI_TaxID=6279;
                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GO:0009573; C:ribulose bisphosphate carboxylase complex; I GO:001684; F:ribulose-bisphosphate carboxylase activity; GO:0016743; F:translation initiation factor activity; IEA. GO:0005215; F:transporter activity; IEA. GO:0015977; F:carbon utilization by fixation of carbon di. GO:0006413; F:translational initiation; IEA. GO:0006410; P:transport; IEA.
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Similarity
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                                                                                                                                                                                                                                             Blaxter M.
TL-1997) to
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                                                          CYSTATIN;
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30.5%;
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Last annotation update)
einase inhibitor.
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                                                                                                                                                                                                                                             Maizels R.M.;
EMBL/GenBank/DDBJ
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Pred. No. 55;
9; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                         Created)
Score 57; DB 5;
Pred. No. 4.1;
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                                           8081351EBE226EB5
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by fixation of carbon di.
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                                                                                                                  activity; IEA
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             Length 161;
                                             CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 4530;
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Matches

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RESULT 7
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ID Q98S
ID Q98S
AC Q98S
DT 01-J
DT 01-
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Query Match
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Best Local S
                                                                                                                                                                               TISSUE-Liver;
Bai J., Lao H., Ye X., Li Y., Lou
Bai J., Lao H., Ye X., Li Y., Lou
Bai J., Lao H., Ye X., Li Y., Lou
"Molecular cloning and sequence as
species of sturgeons.";
Submitted (JAN-2001) to the EMBL/(
EMBL; AF33611; ARX16732.1; -.
HSSP, P01038; 1A90.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Acipenser schrenckii (Amur sturgeon).
Eukaryota; Metazoa; Chordata; Craniata; Verteb;
Actinopterygii; Chondrostei; Acipenseriformes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-JUN-2001 (TrEMBLrel. 17, 01-JUN-2001 (TrEMBLrel. 17, 01-JUN-2003 (TrEMBLrel. 24,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bai J., Lao H., Ye X., Li Y., Lou J.;
"Molecular cloning and sequence analysis of cystatin cDNA from
species of sturgeons.";
Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; AF334610; AAK16731.1; -.
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                                             PROSITE; PS00287; CYSTATIN; 1.
NON TER 1 1
SEQUENCE 112 AA; 12231 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPROUDULU; Cyptatin; 1.
Pfam; PF00031; Cystatin; 1.
SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               v1-JUN-2001 (TrEMBLrel. 17, 01-JUN-2001 (TrEMBLrel. 17, 01-JUN-2003 (TrEMBLrel. 24, Cystatin (Transmann)
                                                                                                                GO; GO:0004869; F:cysteine protease inhibitor activity; IEA InterPro; IPR000010; Cystatin. Pfam; PF00031; Cystatin; 1.
                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cystatin (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q98SR3;
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Actinopterygii; Chondrostei; Acipenseriformes; Acipe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q98SR4;
01-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=111304;
                                                                                                                                                                                                                                                                                                                                                                                                                                         Acipenser
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Cystatin (Fragment)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=61970;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Acipenser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GO:0004869; F:cysteine protease inhibitor activity; IEA srPro; IPR000010; Cystatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KDSLQWITDQYNKESDDKYHFRIFRVLKVQRQV 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                :| : :||| |:||: :|| |:||
alwyamkeynkasndlynfrvvdilksQeQitd
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             41.2%; Score 77; DB 13;
42.4%; Pred. No. 0.0042;
tive 11; Mismatches
  41.2%;
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Last sequence update)
Last annotation updat
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  Score
                                                                                                                                                                                                                                                                    Lou J.;
ce analysis of cystatin cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             48ECEBFED8A08C00 CRC64;
                                               48ECEBFED8A08C00 CRC64;
  77;
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  DB
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
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Length 112;
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RESULT 8
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Best Local S
Matches 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity 42.4 Matches 14; Conservative
                                                                                                                                                                                                                                                                                                      Taupin P.J
Gage F.H.;
                                                                                                                                                                                                                                                                                                                   STRAIN=BALB/c;
STRAIN=BALB/c; PubMed=11144350;
MEDLINE=21010502; PubMed=11144350;
                                                                                                                EMBL; AF311741; AAG40283.1;
HSSP; P01034; 1G96.
GO; GO:0004869; F:cysteine [
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-MAR-2001
01-JUN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pfam; PI
NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Cystatin C precursor (Fragment).
Sus scrofa (Pig).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence up
01-JUN-2003 (TrEMBLrel. 24, Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             029212
                      Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
                                                                                                                                                                                                            autocrine/paracrine cofactor.
Neuron 28:385-397(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q9EPX9;
01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q9EPX9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TISSUE=Small intestine;
MEDLINE=96327607; PubMed=8672129;
Winteroe A.K., Fredholm M., Davies W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
                                                                                                                                                                                                                                                                         "FGF-2-Responsive neural stem cell
                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cystatin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mamm. Genome 7:509-517(1996).
EMBL; F14794; CAA23262.1; -.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q29212;
                                                                                      30; GO:0004869; F:cysteine protease InterPro; IPR000010; Cystatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             library.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Evaluation and characterization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P; P01034; 1G96.
G0:0004869; F:cysteine protease inhibitor erPro; IPR000010; Cystatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PF00031; cystatin; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      50
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13; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   μ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QQALSFXLSEYNKASNXAYHXRXLRVLXVRKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KDSLQWITDQYNKESDDKYHFRIFRVLKVQRQ 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QDALKFAVAEFNKASNDMYIHRVSKVVKVQKQV 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
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CYSTATIN;
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Rodentia;
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1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 69; DB 6;
Pred. No. 0.039;
7; Mismatches 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   25E83E431135B8A7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
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                                                                                                                      activity; IEA
                                                                                                                                                                                                                                                                                                                                      Hakansson K.,
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RESULT 4
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                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
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Best Local (
                                                                                                                             Q9DAP1
Q9DAP1;
Q1-JUN-2001
01-JUN-2001
01-JUN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q8K5A3;
01-OCT-2002
01-OCT-2002
01-JUN-2003
  Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN-Sprague-Dawley;
Hamil K.G., Hall S.H.;
Submitted (APR-2002) to the EMBL/GenBank/DDBJ databases.
EMBL; AF501290; AAM21709.1; -.
GO; GO:0004869; F:cysteine protease inhibitor activity; IEA.
InterPro; IPR000010; Cystatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cystatin 11.
CST11.
                                                                                      1700006C19Rik protein.
1700006C19RIK.
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Hamil K.G., Liu Q., Zhang
"SC13: A novel epididymal
Submitted (JAN-2001) to the
                                                                  Mus musculus (Mouse).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q8K5A3
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=9606;
[1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota, Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SC13delta
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    domo sapiens
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                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PF00031;
                                                                                                                                                                                                                                                                                                                                                                                                                    l Similarity
17; Conserv
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                                                                                                                                                                                                                                                                                                                               KETLEYVTEEYNKKSEDLYNFRILRILKIEKQMTN 79
                                                                                                                                                                                                                                                                                                                                                                      KDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTD 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KDSLQWITDQYNKESDDKYHFRIFRVLKVQRQ 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KDSLQWITDQYNKESDDKYHFRIFRVLKVQRQ 76
                                                                                                                           (TrEMBLrel. 17, (TrEMBLrel. 17, ) (TrEMBLrel. 24,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             103 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           139 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (TrEMBLrel. 22, (TrEMBLrel. 22, (TrEMBLrel. 24,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16686 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Primates;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Chordata;
                                           Chordata;
                         Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Zhang Y.-L., French F.S., Hall S.H.; dymal specific member of the cystatin to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                    62.0%;
48.6%;
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                                                                                                                                                                                                                                                                                                                                                                                                                      16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Created)
Last sequence update)
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Last sequence update)
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Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No. 1.70
6; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 116;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                  Craniata; Vertebrata; Euteleostomi;
Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Craniata; Vertebrata; Euteleostomi;
Sciurognathi; Muridae; Murinae; Rattus
                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         E1E36DB786B4D08C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             05DD92C47387B022 CRC64
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                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 11;
L.7e-08;
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RA Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
RA Arakawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
RA Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
RA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
RA Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,
RA Kuchl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
RA Schriml L.M., Staubhi F., Suzuki R., Tomita M., Wagner L., Washio T.,
RA Schriml L.M., Staubhi F., Suzuki R., Tomita M., Wagner L., Washio T.,
RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Blake J., Boifelli D., Bojunga N., Carninci P., de Bonaldo M.P.,
RA Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.P.,
RA Brownstein M.J., Bult C., Pletcher C., Fujita M., Gariboldi M.,
RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
RA Lyons P., Marchionni L., Mashina J., Mazzarelli J., Mombaerts P.,
RA Sasaki H., Sato K., Schoenbach C., Seya T., Shabata Y., Storch K.-F.,
RA Suzuki H., Toyo-oka K., Wang K.H., Weitz C., Whittaker C., Wilming L.,
Wandshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
RA Manashizki Y. .
                                                                                                              Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local (
                                                                              Matches
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                                                                                                                                                                                                                                                            EMBL; BC048681; AAH48681.1; GO; GO:0004869; F:cysteine protease in InterPro; IPR000010; Cystatin. InterPro; IPR003243; Cystatin_C/M. Pfam; PF00031; Cystatin; 1. ProDom; PD001231; Cystatin_C/M; 1. SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-JUN-2003 (TrEMBLrel. 24,
01-JUN-2003 (TrEMBLrel. 24,
01-OCT-2003 (TrEMBLrel. 25,
RIKEN CDNA 1700006C19 gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hayashizaki Y.;
"Functional annotation of a full-length Nature 409:685-690(2001).
                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Strausberg R.; Submitted (MAR-2003) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q80ZN5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
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SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MGD; MGI:1916544; 1700006C19Rik.
GO; GO:0004869; F:cysteine prote
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HSSP; P01038; 1CEW.
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STRAIN=C57BL/6J; TISSUE=Testis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE=Testicle;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q80ZN5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=21085660; PubMed=11217851;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR000010; Cystatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              U
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                                                                          Similarity
   SLQWITDQYNKESDDKYHFRIFRVLKVQRQVTD
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                                                                                                                                                                                                                                    141 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    141 AA;
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                                                                              Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BAB24175.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Chordata;
Rodentia;
                                                                                                                                                                                                                                16825 MW; C20FA0D8A884951F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16811 MW;
                                                                                                              44.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              44.48;
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                                                                          Score 83; DB:
Pred. No. 0.000
8; Mismatches
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Q8wxu5 homo sapien
Q8wxu5 homo sapien
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Q9dap1 mus musculu
Q80zn5 mus musculu
Q98sr4 acipenser s
Q98sr3 acipenser s
Q29212 sus scrofa
Q99px9 mus musculu
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Q8i2k6 plasmodium
O16159 brugia mala
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Q8WXU5;
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01-MAR-2002
01-MAR-2002
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GO; GO:0004869; F:cysteine protease inhibitor activity; IEA.
InterPro; IPR000010; Cystatin.
Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
SEQUENCE 138 AA; 16506 MW; E49440ACA3585C64 CRC64;
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Hamil K.G., Liu Q., Zhang Y.-L., French F.S., Hall S.H.;

"SC13: A novel epididymal specific member of the cystatin family.";

submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.
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Mammalia; Eutheria;
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(TrEMBLrel. 20, (TrEMBLrel. 20,
                                                                                             PRELIMINARY;
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A Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,

A Klauener R.D., Collins F.S., Magner L., Schemmen C.M., Schuler G.D.,

A Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

A Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Habeh F.,

A Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

B Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

B Stapleron M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,

B Brownstein M.J. Usdin T.B., Toshiyuki S., Carninci P., Prange C.,

B Rownstein M.J., Will T.B., Toshiyuki S., Carninci P., Prange C.,

B Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,

Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,

B Rahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,

Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
                                                                                                                                                                                                                                                                                                  Gapa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN=129/Sv; TISSUE-Liver; MEDLINE=91317392; PubMed=7835704; MEDLINE=95137392; PubMed=7835704; Huh C., Nagle J.W., Kozak C.A., Abrahamson M., Karlsson S.; Structural organization, expression and chromosomal mapping of the mouse cystatin-C-encoding gene (Cst3).";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
STRAIN=BALB/c; TISSUB=Brain;
MEDLINE=91054522; PubMed=2241983;
SOLem M., Rawson C., Lindburg K., Barnes D.;
"Transforming growth factor beta regulates cystatin C in serum-free mouse embryo (SFME) cells.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.

STRAIN=LIS, and ISS;

MEDLINE=21363810; PubMed=11471062;

Bhringer M.A., Thompson J., Conroy O., Xu Y., Yang F., Canniff J.,

Bheson M., Gordon L., Bennett B., Johnson T.E., Sikela J.M.;

"High-throughput sequence identification of gene coding variants
within alcohol-related QTLB.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
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                                                                REACTIVE SITE (BY SIMILARITY)
SECONDARY AREA OF CONTACT.
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BY SIMILARITY.
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732760DF347515BC CRC64;
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01-FRB-1996 (Rel. 33, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
Cystatin C precursor (Cystatin 3).
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                                                                                                                                                                                                                                                                                                                                                                          PRT; 140 AA
                                                   CYSTATIN
Thiol protease inhibitor; Signal.
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                                                                                                                                                                                                                                                                      Local Similarity 38.7 tes 12; Conservative
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@ib-sib.ch).
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Green E.D., Dickson M.C.,
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137 BY SIMILARITY.
16 A -> G (IN REF. 1).
184 L -> F (IN REF. 1).
15531 MW, 3A563406DD58D0F5 CRC64;
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REACTIVE SITE.
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Pred. No. 0.029;
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                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL, U10098; AAB41056.1; -.
EMBL, AAR48486; AAL90760.1; -.
EMBL, AF483487; AAL90761.1; -.
EMBL, BC002072; AAH02072.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MGD; MGI:102519; CBt3.
InterPro; IPR000010; Cystatin.
Pfam; PF00011; Cystatin; 1.
SMART; SM00043; CY; 1.
PROSITE; PS00287; CYSTATIN; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            35.8%;
35.5%;
                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; M59470; AAA63298.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity 35.5% les 11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PIR; A36163; A36163.
HSSP; P01034; 1G96.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      140 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SITE
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Search completed: March 18, 2004, 14:16:10 Job time : 4.16667 secs

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CYPCA
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                                                                                                                                                                                                                              SEQUENCE
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Matches
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CYT_CYPCA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sertoli cells.";
FEBS Lett. 300:131-135(1992).
-I-FUNCTION: AB an inhibitor of cysteine proteinases, this protein is thought to serve an important physiological role as a local regulator of this enzyme activity. Known to inhibits cathepsin B,
                                                                                                                                                                                                                                                                                                                                                                                  Cole T., Dickson P.W., Esnard F., Averill F., Risbridger G., Gauthier F., Schreiber G.; "The cDNA structure and expression analysis of the genes for the cysteine proteinase inhibitor cystetin C and for beta 2-microglobulin
                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE OF 8-127.

MEDLINE=90380276; PubMed=2400577;

Benard P., Benard A., Faucher D., Capony J.-P., Derancourt J.,

Brillard M., Gauthier F.;

"Rat cystatin C: the complete amino acid sequence reveals a site for N-glycosylation.";

Biol. Chem. Hoppe-Seyler 371:161-166(1990).
                                                                                                                                                                                                                                                                                                        Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TISSUE=Sertoli cells;
MEDLINE=9225121; PubMed=1563513;
Egnard A., Esnard F., Gulllou F., Gauthier F.;
"Production of the cysteine proteinase inhibitor cystatin C by rat
                                                                                                                     ;
0
Thiol protease inhibitor; Amyloid; Signal; Disease mutation;
                                                                                               36.9%; Score 69; DB 1; Length 146; 35.5%; Pred. No. 0.016;
                                                                                                                  10; Indels
                              CYSTATIN C.
REACTIVE SITE.
SECONDARY AREA OF CONTACT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE OF 8-49.
MEDLINE=88313020; PubMed=3044831;
Benard A., Esnard F., Faucher D., Gauthier F.;
"Two rat homologues of human cystatin C.";
FEBS Lett. 236:475-478(1988).
                                                                                                                                                                                                                                      01-APR-1990 (Rel. 14, Created)
01-APR-1990 (Rel. 14, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
                                                                                                                                                                                                                     Ş
                                                                                                                                         3 SLQWITDQYNKESDDKYHFRIFRVLKVQRQV 33
                                                                                                                                                      10; Mismatches
                                                                                                                                                                                                                     127
                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=90092122; PubMed=2689174;
                                                                                                                                                                                                                                                                                                                                                                                                                                          Eur. J. Biochem. 186:35-42(1989).
                                                                                                                                                                                                                                                                          Cystatin C precursor (Fragment).
           Polymorphism, 3D-structure
                                                                                                                     11; Conservative
                                                                                                                                                                                                                                                                                              Rattus norvegicus (Rat).
                                                                                                                                                                                                                     STANDARD;
                             146
37
85
109
143
                                                                                                         Local Similarity
                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 8-20.
                                                                                                                                                                                                                                                                                                                             NCBI TaxID=10116
                              27
37
81
99
                                                                                                                                                                                                                                                                                                                                                               STRAIN=Buffalo;
                                                                                                                                                                                                                                                                                                                                                                                                                                in rat brain.";
                               CHAIN
ACT SITE
SITE
                                                                                                                                                                                                                     CYTC RAT
                                                             DISULFID
                                                                                               Query Match
                                                                         DISULFID
                                                                                                                                                                                                                              P14841;
                     SIGNAL
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  removed. Usage by and for commercial int (See http://www.isb-sib.ch/announce/
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-JUN-1994 (Rel. 29, Created)
01-JUN-1994 (Rel. 29, Last sequence update)
28-FBB-2003 (Rel. 41, Last annotation update)
Cystatin precursor (Ovarian cystatin) (Fl2).
Cyptinus carpio (Common carp).
Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes;
NCBL_TaxID=7962;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Tsai Y.-J., Chang G.-D., Huang C.-J., Chang Y.-S., Huang F.-L.;
Purification and molecular cloning of carp ovarian cystatin.";
Comp. Blochem. Physiol. 1138:573-580(1996).
-I- FUNCTION: Cysteine proteinse inhibitor.
-I- TISSUE SPECIFICITY: Detected in ovary but not in all the other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 examined tissues.
-!- PTM: THIS PROTEIN IS FURTHER PROCESSED BY AN INTRAMOLECULAR CLEAVAGE TO PRODUCE TWO CHAINS LINKED BY A DISULFIDE BRIDGE.
-!- SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 35.8%; Score 67; DB 1; Length 127; 35.5%; Pred. No. 0.026;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                              CYSTATIN C.
REACTIVE SITE.
SECONDARY AREA OF CONTACT.
BY SIMILARITY.
BY SIMILARITY.
A -> E (IN REF. 2).
W; 78F70158B7925853 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3 SLOWITDOYNKESDDKYHFRIFRVLKVQRQV 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10; Mismatches
modified and this statement is not remove
entities requires a license agreement (So
or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                       Thiol protease inhibitor; Signal.
NON TER
SIGNAL < 1
CHAIN 8 127 CYST
                                                                                                                                         PIR; S07085; S07085.
PIR; S10587; S10587.
HSSP; P01034; 1G96.
InterPro; IPR000010; Cystatin.
PEM; PP00031; Cystatin; 1.
SMART; SM00043; CY; 1.
PROSITE; PS00287; CYSTATIN; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14039 MW;
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Pfam; PF00011; Cystatin; 1.
SMART; SM00043; CY; 1.
PROSITE; PS00287; CYSTATIN; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; L23572; AAB48011.1; -. 4SSP; P01038; 1CEW.
                                                                                                                 EMBL; X16957; CAA34831.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity 35.5 ies 11; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                 127
18
66
90
124
25
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RR SEQUENCE FROM N.A.

RA MEDLINE-21638749; PubMed=11780052;
RA Deloukas P., Matthews L.H., Ashurst J., Burton J., Gilbert J.G.R.,
Beloukas P., Matthews L.H., Ashurst J., Burton J., Gilbert J.G.R.,
Boones M., Stavrides G., Almeida J. P., Babbage A.K., Bagguley C.L.,
RA Bailey J., Barlow K.F., Bates K.M., Beard L.M., Beard D.M.,
Buck D., Burrill W.D., Bultler A.P., Carder C., Carter N.P.,
RA Chapman J.C., Clamp M., Clark G., Clark L.N., Clark S.Y., Clee C.M.,
Classon A., Coville G.J., Deadman R., Dhami P.D., Dunn M.,
Culson A., Coville G.J., Deadman R., Dhami P.D., Dunn M.,
RA Ellington A.G., Frankland J.A., French L., Garner P.,
RA Huckle E., Hunt A.R., Hunt S.E., Jekosch R., Johnson D.,
RA Huckle E., Hunt A.R., Hunt S.E., Jekosch R., Johnson C.M., Johnson D.,
RA WAN M.P., Kimberley A.M., King A., Knights A., Laird G.K., Lawlor S.,
Lehvacelaiho M.H., Leversha M.A., Lloyd C., Lloyd D.M., Lovell J.D.,
RA Mine S.A., Mistry D., Moore M.J.F., Mullikin J.C., Nickerson T.,
RA Rice C.M., Ross M.T., Soderlund C., Steward C.A., Sluwken R., Sime S.,
Skuce C.D., Smith M.L., Soderlund C., Steward C.A., Sulston J.E.,
RA Tracey A., Tromans A.C., Vaudin M., Wallia M., Wallia G.M.,
Whitehead S.L., Whittaker P., Willey D.L., Williams L., Williams E.,
Whitining L., Waray P.W., Hubbard T., Durbin R.M., Bentley D.R., Beck S.,
RA Wilming L., Wray P.W., Hubbard T., Durbin R.M., Bentley D.R., Beck S.,
Rylming L., Wray P.W., Hubbard T., Durbin R.M., Bentley D.R., Beck S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Protein inhibitors of cysteine proteinases. III. Amino-acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and comparative analysis of human chromosome 20.";
               Dickinson D.P., Hewett-Emmett D., Thiesse M.; "Acquisition of complex patterns of differential expression in epithelial cell populations during the evolution of type 2 cystatin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE OP 27-73.
BEDILNES #84110055; PubMed=6662498;
Turk V., Brzin J., Longer M., Ritonja A., Eropkin M., Borchart U.,
Machleidt W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'Human gamma-trace, a basic microprotein: amino acid sequence and
                                                                               Submitted (NOV-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        presence in the adenohypophysis.";
Proc. Natl. Acad. Sci. U.S.A. 79:3024-3027(1982).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=82222268; PubMed=6283552;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and mouse cDNA sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "The DNA sequence and co
Nature 414:865-871(2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Grubb A., Loefberg H.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE OF 27-146.
                                                                                                                SEQUENCE FROM N.A.
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SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TISSUE=Brain;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               reaction based analysis.";

Hum. Genet. 89:377-380(1992).

-!- FUNCTION: As an inhibitor of cysteine proteinases, this protein is thought to serve an important physiological role as a local regulator of this enzyme activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TISSUE SPECIFICITY: Expressed in highest levels in the epididymis, vas deferens, brain, thymus, and ovary and the lowest in the submandibular gland.

DISEASE: Defects in CST3 are a cause of hereditary cerebral hemorrhage with amyloidosis (HCHWA) [MIM:105150]; also known as cerebral amyloid anglopathy (CAA) or cerebroarterial amyloidosis cerebral is characterized by a thickening of the cerebral arteries walls with deposition of material with the
                                                                                                                                                                                                                                                                                                                                                                      Grubb A., Loefberg H., Barrett A.J.;
"The disulphide bridges of human cystatin C (gamma-trace) and chicken
                                                                                                                                                         MEDLINE-84128015; PubMed-6365094;
Brzin J., Popovic T., Turk V.;
"Human cystatin, a new protein inhibitor of cysteine proteinases.";
Blochem. Biophys. Res. Commun. 118:103-109(1984).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Abrahamson M., Jonsdottir S., Olafsson I., Jensson O., Grubb A.; "Hereditary cystatin C amyloid angiopathy: identification of the disease-causing mutation and specific diagnosis by polymerase chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Janowski R., Kozak M., Jankowska B., Grzonka Z., Grubb A.,
Abrahamson M., Jaskolski M.;
"Human oystatin C, an amyloidogenic protein, dimerizes through
three-dimensional domain swapping.";
Nat. Struct. Biol. 8:316-320(2001).
of cystatin from chicken egg white.";
Hoppe-Seyler's Z. Physiol. Chem. 364:1487-1496(1983).
[10]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              X-RAY CRYSTALLOGRAPHY (2.50 ANGSTROMS) OF 27-146.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    characteristics of amyloid. SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=21173909; PubMed=11276250;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=92316504; PubMed=1352269;
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M27890; AAA52164.1; JOINED.
X61681; CAA43856.2; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          X61682; CAA43856.2; JOINED. X61683; CAA43856.2; JOINED.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              nterPro, IPR000010; Cystatin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROSITE; PS00287; CYSTATIN; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EBS Lett. 170:370-374 (1984).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; X05607; CAA29096.1; -. EMBL; X52255; CAA36497.1; -.
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SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         M27891; AAA52164.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUBUNIT: Homodimer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PIR; S10216; UDHU.
PDB; 1G96; 06-APR-01.
Genew; HGNC:2475; CST3.
                                                                                                                                SEQUENCE OF 27-76.
                                                                                                                                                                                                                                                                                                                                     DISULFIDE BONDS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4IM; 105150
                                                                                                                                                                                                                                                                                                                                                                                                                                                 cystatin."
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EMBL; Y10811; CAA71771.1; -.
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CYTC HUMAN
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Matches
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      DR REAL TELETICAL SOLUTION SOL
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
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Mammalia; Butheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=85231205; PubMed=3891407;
Hirado M., Teunasawa S., Sakiyama F., Niinobe M., Fujii S.;
"Complete amino acid sequence of bovine colostrum low-Mr cysteine
proteinase inhibitor";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
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MEDLINE=98094199; PubMed=9434110;
Olsson S.-L., Ek B., Wilm M., Broberg S., Rask L., Bjoerk I.;
"Molecular cloning and N-terminal analysis of bovine cystatin identification of a full-length N-terminal region.";
Bjochim. Biophys. Acta 1343:203-210(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              P01035,
21-JUL-1986 (Rel. 01, Created)
15-JUL-1999 (Rel. 38, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Cystatin C precursor (Colostrum thiol proteinase inhibitor).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         37.4%; Score 70; DB 1; Length 146; 35.5%; Pred. No. 0.012;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10; Indels
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BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              08196353C0306AA3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEBS Lett. 186:41-45(1985).
-!- FUNCTION: This is a thiol proteinase inhibitor.
-!- MASS SPECTROMETRY: NW=13420; METHOD=MALDI.
-!- SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                       HSSP; FULUAS; LUCAS, LUCAS, LUCAS, LUCAS, LUCAS, LUCAS, LUCAS, LUCAS, EAGURY, SM00043; CY; 1.

PROSITE; PS00287; CY; 1.

PROSITE; PS00287; CY; 1.

PROSITE; PS00287; CYSTATIN; 1.

REY SIGNAL.

26 RY SIMILARITY.

27 146 CYSTATIN C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   148 AA.
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52 ALDFAVSEYNKASNDMYHSRALQVVRARKQI 82
                                                                                                                                                                                                                                                                                                                                                                           REACTIVE SITE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10; Mismatches
                                                                                                                                                                                                                                                                                                                                                                       37 37 RE
81 85 SE
99 109 BY
123 143 BY
146 AA; 15946 MW;
                                                                                                                                                                               EMBL; U52028; AAB64051.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE OF 37-148.
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CYTC_BOVIN
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Matches
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(Neuroendocrine basic polypeptide) (Gamma-trace)
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MEDLINE=90303202; PubMed=2363674;
Abrahamson M., Olafsson I., Palsdottir A., Ulvsbaeck M., Lundwall A.,
Jennson O., Grubb A.;
"Structure and expression of the human cystatin C gene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B., Lopez-Otin C., Ghiso J., Geltner D., Frangione B.;
ske in Icelandic patients with hereditary amyloid angiopathy is
ed to a mutation in the cystatin C gene, an inhibitor of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE-89350949; PubMed=2764935; Saitch E., Sabatini L.M., Eddy R.L., Shows T.B., Azen E.A., Isemura S., Sanada K.; "The human cystatin C gene (CST3) is a member of the cystatin gene family which is localized on chromosome 20."; Biochem. Biophys. Res. Commun. 162:1324-1331(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=87219149; PubMed=3495457;
Abrahamson M., Grubb A., Olafeson I., Lundwall A.;
Molecular cloning and sequence analysis of cDNA coding for the precursor of the human cysteine proteinase inhibitor cystatin C.";
FEBS Lett. 216:229-233 (1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                 Thiol protease inhibitor; Signal; Pyrrolidone carboxylic acid. SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                     37.4%; Score 70; DB 1; Length 148; 33.3%; Pred. No. 0.012; Live 12; Mismatches 10; Indels
                                                                                                                                                                                                                                          REACTIVE SITE.
SECONDARY AREA OF CONTACT.
BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                     16265 MW; EE740FE37CFB9F0E CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     53 QEALSFAVSEFNKRSNDAYQSRVVRVVRARKQV 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               , Last sequence update)
, Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   146 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A. (HCHWA VARIANT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TISSUE=Brain;
MEDLINE=89235594; PubMed=2541223;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cysteine proteases.";
J. Exp. Med. 169:1771-1778(1989)
                InterPro; IPR000010; Cystatin. Pfam; PF00031; cystatin; 1. SMART; SM00043; CY; 1. PROSITE; PS00287; CXSTATIN; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            iochem. J. 268:287-294(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                30
148
31
40
88
112
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-AUG-1988 (Rel. 08, 10-OCT-2003 (Rel. 42,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cystatin C precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sapiens (Human)
HSSP; P01034; 1G96.
                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
es 11; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
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Matches

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                                                                                                                                                                      Stroke 27:2080-2085(1996).
-!- FUNCTION: As an inhibitor of cysteine proteinases, this protein is thought to serve an important physiological role as a local regulator of this enzyme activity.
-!- SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Platyrrhini; Cebidae; Cebinae; Saimiri
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
                                                                                 SEQUENCE FROM N.A.
MEDLINE-97054223; PubMed-8898820;
MEDLINE-97054223; PubMed-8898820;
MEDLINE, Walker L.C., Levy E.;
"Cystatin C. Icelandic-like mutation in an animal model of cerebrovascular beta-amyloidosis.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               37.4%; Score 70; DB 1; Length 146; 35.5%; Pred. No. 0.012; tive 10; Mismatches 10; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=97054523; PubMed=8898820;
Wei L.H., Walker L.C., Levy E.;
"Cystatin C. Icelandic-like mutation in an animal model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SECONDARY AREA OF CONTACT.
BY SIMILARITY.
BY SIMILARITY.
F0B3BB774A29DF26 CRC64;
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15-JUL-1998 (Rel. 36, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Cystatin C precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BY SIMILARITY.
CYSTATIN C.
REACTIVE SITE.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Thiol protease inhibitor; Amyloid; Signal.
SIGNAL 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Saimiri sciureus (Common squirrel monkey)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cerebrovascular beta-amyloidosis.";
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Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15857 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; U51912; AAB64050.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity 35.5%;
Matches 11; Conservative 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PROSITE; PS00287; CYSTATIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                  Cercopithecinae, Macaca.
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146
37
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109
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=9521;
                                                    NCBI_TaxID=9544
                                                                                                                                                                                                                                                                                                                                                                                                                                       P01034;
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DISULFID
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                                                                                                                                                                                                                                                                                                                                                                                                 Coturnix coturnix japonica (Japanese quail).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
                                                                                                                                       Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TISSUE-Egg white;
MEDLINE=97420480; PubMed=9276465;
Gerhartz B., Engh R.A., Mentele R., Eckerskorn C., Torquato R.,
Wittman J., Kolb H.J., Machleidt W., Fritz H., Auerswald B.A.;
"Quail cystatin: isolation and characterisation of a new member of the cystatin family and its hypothetical interaction with cathepsin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .i- FUNCTION: This protein binds tightly to and inhibits papain and
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 116;
                                                                                                   38.5%; Score 72; DB 1; Length 148; 38.7%; Pred. No. 0.0064; ive 10; Mismatches 9; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                38.0%; Score 71; DB 1; Length 116
38.7%; Pred. No. 0.0067; Undels
                SECONDARY AREA OF CONTACT.
BY SIMILARITY.
BY SIMILARITY.
1523C831169E5B9A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Thiol protease inhibitor; Phosphorylation.

ACT SITE 9 9 REACTIVE SITE.

SITE 53 57 SECONDARY AREA OF CONTACT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              80 80 PHOSPHORYLATION.
116 AA; 13093 MW; 48248621053A2F70 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -!- SIMILARITY: Belongs to the cystatin family.
HSSP; P01038; ICEW.
InterPro; IPR000010; Cystatin.
                                                                                                                                                                                                                                                                                                                              15-JUL-1998 (Rel. 36, Created)
15-JUL-1998 (Rel. 36, Last sequence update)
15-FEB-2003 (Rel. 41, Last annotation update)
Cystatin (Egg-white cystatin).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15-JUL-1998 (Rel. 36, Created)
15-JUL-1998 (Rel. 36, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
                                                                                                                                                                          3 SLOWITDOYNKESDDKYHFRIFRVLKVQRQV 33
                                                                                                                                                                                              116 AA
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 REACTIVE SITE.
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39 RE
87 SE
111 BY
145 BY
16346 MW;
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SMART; SM00043; CY; 1.
PROSITE; PS00287; CYSTATIN; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEBS Lett. 412:551-558(1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity 38.74 tes 12; Conservative
                                                                                                                                       12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                STANDARD;
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81
 39
83
101
125
148 AA;
                                                                                                                     Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=93934;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cathepsin B.
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SEQUENCE
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                                                                                                     Query Match
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RESULT 8

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AC AC P8106

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-!- SIMILARITY: Belongs to the cystatin family

Cystatin C precursor. CST3. Macaca mulatta (Rhesus macaque).

CYTC MACMU
ID CYTC ME
DCYTC ME
DT 15-JUL
DT 15-JUL
DT 28-PEB
DT 28-PEB
GN CST3.

RESULT

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Matches

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CYSTATIN
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Best Local Similarity 41.9
Matches 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
Cystatin C precursor.
                                                                                                                                                                                                                                                                                    139 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RABIT
           ACT SITE
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CYTC_RABIT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3rubb A., Loefberg H., Barrett A.J.;
"The disulphide bridges of human cystatin C (gamma-trace) and chicken
                                                                         Aschleidt W.;
Protein inhibitors of cysteine proteinases. III. Amino-acid sequence
                                                                                                                                                      MEDLINE-83256421; PubMed-6409085; Anacklin M.J.H., Sayers C.A., Anackasi A., Brown M.A., Kembhavi A.A., Nicklin M.J.H., Sayers C.A., Sunter D.C., Barrett A.J., "Cystetin, a protein inhibitor of cysteine proteinases. Improved purification from egg white, characterization, and detection in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     X-RAY CRYSTALLOGRAPHY (2.0 ANGSTROMS).
MEDLINE=89022676; PubMed=3191914;
Bode W., Engh R., Musil D., Thiele U., Huber R., Karshikov A.,
Brzin J., Kos J., Turk V.;
"The 2.0 A X-ray crystal structure of chicken egg white cystatin and its possible mode of interaction with cysteine proteinases.";
EMBO J. 7:2593-2599(1988).
                                MEDLINE-84110059; PubMed-6662498;
Turk V., Brzin J., Longer M., Ritonja A., Eropkin M., Borchart U.,
Machleidt W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PDB; ICEW; 31-7-MAY-94.

PDB; 1CEW; 31-7-MAY-98.

PDB; 1A67; 27-MAY-98.

PDB; 1A90; 17-JUN-98.

PDB; 1A90; 17-JUN-98.

PDB; 1A90; 17-JUN-98.

PROSOURT; SM00043; CY; 11.

PROSITE; PS00287; CYSTATIN; 1.

PROSITE; PS00287; CYSTATIN; 1.

PRIOL protease inhibitor; Phosphorylation; Signal; 3D-structure. SIGNAL.
                                                                                                                                                                                                                                                                                                                                                                                      Laber B., Krieglstein K., Henschen A., Kos J., Turk V., Huber R.,
                                                                                                                                                                                                                                                                                                                                                                                                             "The cysteine proteinase inhibitor chicken cystatin is phosphoprotein.";
                                                                                                 of cystatin from chicken egg white.";
Hoppe-Seyler's Z. Physiol. Chem. 364:1487-1496(1983)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                        PHOSPHORYLATION.
MEDLINE=89252033; PubMed=2721673;
 Biochem. J. 217:813-817(1984)
                                                                                                                                                                                                                                           Biochem. J. 211:129-138(1983)
                                                                                                                                                                                                                                                                                                                                                                                                                                           EBS Lett. 248:162-168(1989).
                                                                                                                                                                                                                                                                                                                              FEBS Lett. 170:370-374(1984)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; J05077; AAA48744.1; -.
                                                                                                                                           CHARACTERIZATION OF PROTEIN
                           SEQUENCE OF 24-139.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRUCTURE BY NMR.
                                                                                                                                                                                                                              chicken serum.";
                                                                                                                                                                                                                                                                       DISULFIDE BONDS
                                                                                                                                                                                                                                                                                                                  cystatin.";
                                                                                                                                                                                                                                                                                                                                                                                                    3ode W.;
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Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
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Kawashima H.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 39.0%; Score 73; DB 1; Length 139; 41.9%; Pred. No. 0.0044; ive 9; Mismatches 9; Indels
REACTIVE SITE.
SECONDARY AREA OF CONTACT.
                                                                                                               PHOSPHORYLATION (PARTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15287 MW; D92D1131C4D37891 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            148 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3 SLOWITDQYNKESDDKYHFRIFRVLKVQRQV 33
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SMART, SM00043; Cy: 1.
PROSITE; PS00287; CYSTATIN; FALSE_NEG.
Thiol protease inhibitor; Signal.
SIGNAL 28 POTENTIAL.
29 148
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STRAIN-Japanese white; TISSUE-Bone;
MEDLINE-98424349; PubMed-9753427;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; AB009342; BAA75921.1; -. HSSP; P01034; 1G96. InterPro; IPR000010; Cystatin.
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MEDLINE=89076505; PubMed=3202964;
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DISULFID
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CYT_CHICK
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RADIOLNE-21639749; PubMed=11780052;

RA BEDIOLNE-21639749; PubMed=11780052;

RA Deloukas P., Matthews L.H., Ashurst J., Burton J., Gilbert J.G.R.,

RA Deloukas P., Matthews L.H., Ashurst J., Babbage A.K., Bagguley C.L.,

RA Baailey O.P., Blades K.N., Bates K.N., Beard D.M., Beare D.M.,

RA Beasley O.P., Blades K.N., Earlogeman A.M., Brown A.J.,

RA Chapman J.C., Clarm M., Clark G., Clark L.N., Clark S.Y., Clee C.M.,

RA Chapman J.C., Clamp M., Clark G., Clark L.N., Clark S.Y., Clee C.M.,

RA Chapman D.V., Griffiths R.B., Connor R.E., Corby N.R.,

Coulson A.G., Frankland J.A., Fraser A., French L., Garner P.,

RA Grafham D.V., Griffiths C., Griffiths M.N.D., Gwilliam R., Hall R.E.,

RA Hammond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J.,

RA KAY M.P., Kimberley A.M., King A., Knights A., Laird G.K., Lawlor S.,

Lehvaeslaiho M.H., Leversha M.A., Lloyd C., Lloyd D.M., Lovell J.D.,

RA Milne S.A., Mistry D., Mcconnachie L.J., Mccarson T.,

RA Rice C.M., Ross M.T., Socht C.B., Sehra H.K., Shownkeen R., Sims S.,

Race C.D., Smith M.L., Soderlund C., Steward C.A., Sulston J.E.,

RA Tracey A., Tromans A.C., Vaudin M., Wallis J.M.,

Rhining L., Wray P.W., Hubbard T., Durbin R.M., Bentley D.R., Berk S.,

Whitehead S.L., Whittaker P., Willey D.L., Williams S.A.,

Whitehead S.L., Whittaker P., Willey D.L., Williams L., Williams S.A.,

Whitehead S.L., Whittaker P., Willey D.L., Williams S.A.,

Whore R., Borer J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Issemura S., Saitoh E., Sanada K., Minakata K.; "Identification of full-sized forms of salivary (S-type) cystatins (cystatin SN, cystatin SN, cystatin S, and two phosphorylated forms of cystatin S) in human whole saliva and determination of phosphorylation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and comparative analysis of human chromosome 20.";
                                                                                                                                           MEDLINE=88185836; PubMed=3446578; Saitch E. Kim H.-S., Smithles O., Maeda N.; Saitch E. Kim H.-S., Smithles O., Hada N.; Human cysteine-proteinase inhibitors: nucleotide sequence analysis of three members of the cystatin gene family.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Institute 5., Saitch E., Sanada K.;
Institute 5., Saitch E., Sanada K.;
"Characterization and amino acid sequence of a new acidic cysteine proteinse inhibitor (cystatin SA) structurally closely related to cystatin S, from human whole saliva.";
J. Biochem. 102:693-704(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY SEQUENCE OF 25-141.

Igemura S., Saitoh E., Sanada K., Isemura M., Ito S.;

"Characterization and amino acid sequence of a new acidic cysteine proteinses inhibitor (cystatin SA) structurally closely related to cystatin S, from human whole saliva.";

[In] Turk V. (eds.);
                                                               Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Butheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Cysteine proteinases and their inhibitors, pp.497-505,
Walter de Gruyter, Berlin and New York (1986).
   Last annotation update)
                Cystatin SA precursor (Cystatin S5)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE=92138674; PubMed=1778989;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE OF 25-141.
MEDLINE-88139220; PubMed=3436950;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Biochem. 110:648-654(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE OF 25-141 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nature 414:865-871(2001)
                                                                                                                                                                                                              Gene 61:329-338(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of cystatin S.";
   28-FEB-2003 (Rel. 41,
                                                  (Human)
                                                                                                                [1]
SEQUENCE FROM N.A.
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                                                                                               NCBI_TaxID=9606;
                                                   sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rogers J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The DNA
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Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
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MEDLINE=90008873; PubMed=2793849;
Colella R., Sakaguchi Y., Nagase H., Bird J.W.C.;
Chicken egg white cystatin. Molecular cloning, nucleotide sequence, and tissue distribution.";
Saitch E., Isemura S., Sanada K., Kim H.-S., Smithies O., Maeda N.; "Cystatin superfamily. Evidence that family II cystatin genes are evolutionarily related to family III cystatin genes."; Biol. Chem. Hoppe-Seyler 369:191-197(1988).
-!- FUNCTION: Thiol protease inhibitor.
-!- SUBCELLUIAR LOCATION: Secreted.
-!- SUMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 24-139.
MEDLINE-84178305; PubMed=6712597;
Schwabe C., Anastasi A., Crow H., McDonald J.K., Barrett A.J.;
"Cystatin. Amino acid sequence and possible secondary structure.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GO; GO:0004869; F:cysteine protease inhibitor activity; TAS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 39.6%; Score 74; DB 1; Length 141
Best Local Similarity 35.5%; Pred. No. 0.0032;
Matches 11; Conservative 12; Mismatches 8; Indels
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01-OCT-1989 (Rel. 12, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
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REACTIVE SITE.
SECONDARY AREA O
BY SIMILARITY.
BY SIMILARITY.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     139 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3 SLOWITDOYNKESDDKYHFRIFRVLKVOROV 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cystatin precursor (Egg-white cystatin) Gallus gallus (Chicken).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Biol. Chem. 264:17164-17169(1989)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; M19671; AAA36116.1; JOINED.
EMBL; M19672; AAA36116.1; JOINED.
EMBL; ALS91074; CAC94784.1; -.
PIR; B29632; B29632.
HSSP; P01034; 1G96.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR000010; Cystatin.
Pfam; PF00031; Cystatin; 1.
SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CYSTATIN; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16445 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; M19673; AAA36116.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Genew; HGNC:2474; CST2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       32
80
104
138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      141 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=9031;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MIM; 123856; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CHICK
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Cornwall G.A., Haia N., Sutton H.G., "Structure, alternative splicing and chromosomal localization of the cystatin-related epididymal spermatogenic gene.";
                     SEQUENCE FROM N.A.
STRAIN=C3H, and CD-1;
MEDLINE=99247899; PubMed=10229662;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            81
105
139
39
100
158
16288 MW;
                                                                                                                            lochem. J. 340:85-93 (1999)
                                                                                                                                                              SEQUENCE OF 4-142 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 40.0.
Best Local 14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   142 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DISULFID
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CYTT_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 5
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                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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Milne S.A., Mistry D., Moore M.J.F., Mullikin J.C., Nickerson T., Oliver K., Parker A., Patel R., Pearce T.A.V., Peck A.I., Phillimore B.J.C.T., Prathalingam S.R., Plumb R.W., Ramsay H., Rice C.M., Ross M.T., Scott C.E., Sehra H.K., Shownkeen R., Sims S., Skuce C.D., Smith M.L., Soderlund C., Steward C.A., Sulston J.E., Swann R.M., Sycamore N., Taylor R., Tee L., Thomas D.W., Thorpe A., Tracey A., Tromans A.C., Vaudin M., Wallis J.M., Thorpe A., Whitehead S.L., Whittaker P., Willey D.L., Williams L., Williams S.A., William L., Wanny P.W., Hubbard T., Durbin R.M., Bentley D.R., Beck S.,
                                                                                                                                                                                                                                         -!- SUBCELLULAR LOCATION: Secreted.
-!- TISSUE SPECIFICITY: Proximal caput region of the epididymis. Lower expression in the testis. Within the testis it is localized to the elongating spermatids, whereas within the epididymis it is exclusively synthesized by the proximal caput epithelium.
-!- SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                        "The DNA sequence and comparative analysis of human chromosome 20.";
Nature 414:865-871(2001).
-i- FUNCTION: Performs a specialized role during sperm development and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CYSTATIN-RELATED EPIDIDYMAL SPERMATOGENIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CST8 MOUSE STANDARD; PRT; 142 AA.
P32765; 089102;
01-0CT-1993 (Rel. 27, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Cystatin-related epididymal spermatogenic protein precursor (Cystatin-related epididymal specific protein) (Cystatin 8).
CST8 OR CRES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SECONDARY AREA OF CONTACT (POTENTIAL).
BY SIMILARITY.
BY SIMILARITY.
N-LINKED (GLCNAC. .) (POTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
A - P (in despire).
/FITG=VAR 014527.
/FITG=VAR 014527.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus musculus (Mouse).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae; Mus
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HSSP, P01034; 1096.

Genew, HGNC:2480; CST8.

GO, GO:0004869; F:cysteine protease inhibitor activity; TAS.

InterPro; IPR00010; Cystatin.

Ffam; PF00031; Cystatin.

SWART; SM00043; CY; 1.

Thiol protease inhibitor; Signal; Polymorphism.

SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 142;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7; Mismatches 12; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     46 KQCLWFAAQEYNKESEDKYVFLVVKTLQAQLQVTN 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 82; DB 1; |
Pred. No. 0.00026;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 KDSLOWITDQYNKESDDKYHFRIFRVLKVQRQVTD 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; AF059244; AAC14707.1; -. EMBL; AL109954; CAB64234.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            142 AA; 16275 MW;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity 45.7 tes 16; Conservative
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105
139
27
39
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95
119
27
39
                                                                                                                                                                                                                                maturation.
                                                                                                                                                            Roders J.;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 4
CST8 MOUSE
AD CST6 M
AC P3276 M
DT 30-MAY
DT 28-MAY
DT 28-MAY
DT 28-MAY
CYST8 O
OS MUS MUS MUS
OC BUKARY
OC MARMANI
OX NCBI_T
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SITE
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                                                                                                                                                                                                                                                                                                                      expression in the testis. Within the testis it is localized to the elongating spermatids, whereas within the epididymis it is elongating spermatids, whereas within the epididymis it is exclusively synthesized by the proximal caput epithelium.

-INDUCTION: Testicular factors or hormones other than androgens present in the testicular fluid may be involved in the regulation of CRES gene expression.

-I SIMILMRITY: Belongs to the cystatin family.
                                                                                               "The CRES gene: a unique testis-regulated gene related to the cystatin family is highly restricted in its expression to the proximal region of the mouse epididymis.";
                                                                                                                                                                                            Mol. Endocrinol. 6:1653-1664(1992).
-!- FUNCTION: Performs a specialized role during sperm development and maturation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                POTENTIAL.
CYSTATIN-RELATED EPIDIDYMAL SPERMATOGENIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N-LINKED (GLCNAC. . .) (POTENTIAL).
PLWLSLILFIIP -> GTRDEQVGESQK (IN REF. 2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PROTEIN.
SECONDARY AREA OF CONTACT (POTENTIAL)
SYSTMLARITY.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N-LINKED (GLCNAC. . .) (POTENTIAL).
N-LINKED (GLCNAC. . .) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   50B446E98F66673E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   46 KQCVWFAMKEYNKESEDKYVFLVDKILHAKLQITD 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 KDSLOWITDOYNKESDDKYHFRIFRVLKVORQVTD 35
TISSUE=Epididymis;
MEDLINE=93078799; PubMed=1280328;
Cornwall G.A., Orgebin-Crist M.-C., Hann S.R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              41.2%; Sco...
40.0%; Pred. No. v.v.
... 9; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            141 AA.
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                                                                                                                                                                                                                                                                                        -! - SUBCELLULAR LOCATION: Secreted,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; AF091503; AAC61754.1; --
EMBL; AF090691; AAC36316.1; --
EMBL; A99266; AAC35390.1; --
FIR; A45361; A45361.
HSSP; P01034; 1G96.
MGD; MGI:107161; Cst8.
InterPro; IPR000010; Cygtatin.
Pfam; PF00031; cystatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Thiol protease inhibitor; Signal. SIGNAL 1
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CST8 HU
060676;
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CST8_HUMAN
                                                                                                                                                                                                                                            SIGNAL
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              modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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 non-profit institutions as long as its content is in no
                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                           CYSTATIN 11.
SECONDARY AREA OF CONTACT (POTENTIAL).
BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Functional annotation of a full-length mouse cDNA collection.";
                                                                                                                                                                                                                                                                                       N-LINKED (GLCNAC. . .) (POTENTIAL)
Missing (in isoform 2).
/FTIG=VSP 001260.
                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                    Length 137;
                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                        Plam; Freconds; CY; 1.
SWART; SMOOD43; CY; 1.
PROSITE; PSO0287; CYSTATIN; FALSE_NEG.
Thiol protease inhibitor; Signal; Alternative splicing.
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                    CS85C8C39A585C3B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                  ..
0
                                                                                                                                                                                                                                                                                                                                                                  Score 187; DB 1;
Pred. No. 9.3e-19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                44 KDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTD 78
                                                                                                                                                                                                                                                                                                                                                                                                                              1 KDSLQWITDQYNKESDDKYHPRIFRVLKVQRQVTD 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nature 409:685-690(2001).
-i- SUNCELLIAR LOCATION: Secreted (Potential).
-i- SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28-FEB-2003 (Rel. 41, Created)
28-FEB-2003 (Rel. 41, Last sequence update)
10-OCT-2003 (Rel: 42, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       139 AA
                                                                                                                                                                                                                                                                                                                                                                                                0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
STRAIN=C57BL/6J, TISSUE=Epididymis;
MEDLINE=21085660; Pubmed=11217851;
                                                                                                                  Genew, HGNC:15959, CST11.
InterPro; IPR000010; Cystatin.
Pfam; PF00031; cystatin; 1.
                                                                         EMBL; AL096677; CAC13170.1; -. EMBL; AL096677; CAC17423.1; -.
                                                                                                                                                                                                                                                                                                                                     137 AA; 16375 MW;
                                                                                                                                                                                                                                                                                                                                                                  100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                35; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cystatin 11 precursor.
CST11.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mus musculus (Mouse)
                                                                                                       HSSP; P01038; 1A90.
                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hayashizaki Y.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CS11 MOUSE
Q9D269;
                                                                                                                                                                                                                                                                         DISULFID
CARBOHYD
VARSPLIC
                                                                                                                                                                                                                                                           DISULFID
                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                    Query Match
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@ib-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28-FBB-2003 (Rel. 41, Last annotation update)
Cystatin-related epididymal spermatogenic protein precursor (Cystatin
                                                                                                                                                                                                                                                                                                                                                                                                            CYSTATIN 11.
SECONDARY AREA OF CONTACT (POTENTIAL).
BY SIMILARITY.
BY SIMILARITY.
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cornwall G.A., Hann S.R.; Transient appermatogenesis and Transient appearance of CRES protein during spermatogenesis and caput epididymal sperm maturation."; Mol. Reprod. Dev. 41:37-46(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        134 N-LINKED (GLCNAC. . .) (POTENTIAL)
16217 MW; F228D9815FA32640 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 139;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64.2%; Score 120; DB 1; L
55.9%; Pred. No. 1.5e-09;
iive 12; Mismatches 3;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
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InterPro; IPR000010; Cystatin.
Pfan; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
PROSITE; PS00287; CYSTATIN; PALSE_NEG.
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                                                                                                                                                                                                                                                                                                                                                                  Thiol protease inhibitor; Signal
                                                                                                                                                                                             EMBL; AK020300; BAB32061.1; -. HSSP; P01034; 1G96.
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Les 19; Conservative
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GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on:

March 18, 2004, 14:02:50 ; Search time 4.16667 Seconds (without alignments) 437.389 Million cell updates/sec

US-09-941-314-8 187 1 KDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTD 35 Title: Perfect score:

Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

141681 segs, 52070155 residues Searched:

141681 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

SwissProt_42:* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	Description	Q9h112 homo sapien	9 mus n	O60676 homo sapien	พ กธ ท		gallu			_	O19093 saimiri sci		P01034 homo sapien		P35481 cyprinus ca	-	O88969 rattus norv			Q91195 oncorhynchu	рошо		oncho		_	_	P22853 bacillus ce	•		Q48303 hyphomicrob				Q02168 african hor
SUMMARIES	ID	CS11 HUMAN	CS11_MOUSE	CST8_HUMAN	CST8_MOUSE	CYTT HUMAN	CYT CHICK	CYTC RABIT	CYT COTJA .	CYTC MACMU	CYTC_SAISC	CYTC_BOVIN	CYTC_HUMAN	CYTC RAT	CYT CYPCA	CYTC MOUSE	CST8_RAT	CYTS_RAT	CYT_ONCKE	CYT_ONCMY	CYTN_HUMAN	CYTS_HUMAN	CYTX_ONCVO	CSTL_HUMAN	NCAP_BUNIC	CYT_BITAR	MERR BACCE	SYE_VIBPA	DA82_YEAST	DHDM HYPSX	GUNW_ERWCA	UTRO HUMAN	SYE_VIBVY	VP5_AHSV4
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O9bvi0 homo sapien P44689 haemophilus	099w75 staphylococ P35970 african swi P26813 african swi	Q8blg0 mus musculu Q9z0h6 mus musculu	Q8qlk1 mamestra co Q99487 homo sapien	P48971 nostoc punc P50818 human papil	P04196 homo sapien
HC58_HUMAN MESJ_HAEIN	SYE STAAM DNLI ASFB7 DNLI ASFM2	HC58_MOUSE CST9_MOUSE	CATV_NPVMC PAF2_HUMAN	OPCA NOSPU VL1 HPV50	HRG_HUMAN
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1012	484 419 419	1010	337 392	465 515	525
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50.5	50 49.5 49.5	49.5 49	4. 4. 0. 0.	4. 4. 0. 0	49
35	36 37 38	39 40	41	4 4 6 4	45

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not compared with conceptual translation
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47 ALHFAISEYNKATKDDYYRRPLRVLRARQO 76
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Status: preliminary
A;Molecule type: protein
A;Residues: 21-55 <RAM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Job time : 6.73611 secs
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                                                                                                                                                                                                                                                                                       A; Accession: A29632
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A,Residues: 21-55 «RAM»
R;Johnsson, M.; Richardson, C.F.; Bergey, E.J.; Levine, M.J.; Nancollas, G.H.
Arch. Oral Biol. 36, 631-636, 1991
A;Title: The effects of human salivary cystatins and statherin on hydroxyapatite crystal
A;Reference number: A56608; MUID:92074898; PMID:1741693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Note: sequence extracted from NCBI backbone (NCBIP:67866)
A;Note: authors desigate form without phosphate as cystatin S and form containing one ph
C;Comment: This protein strongly inhibits papain and ficin, partially inhibits stem brom
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A;Molecule type: mRNA
A;Molecule type: mRNA
A;Molecule type: mRNA
A;Rediues: 1-141 <ALH>
A;Cross-references: GB:J03870; NID:g337751; PIDN:AAA60299.1; PID:g337752
A;Cross-references: GB:J03870; NID:g337751; PIDN:AAA60299.1; PID:g337752
B;Saitch, E.; Isemura, S.; Sanada, K.; Kim, H.S.; Smithies, O.; Maeda, N.
Biol. Chem. Hoppe-Seyler 369, 191-197, 1988
A;Title: Cystatin genes are evolutionarily
A;Reference number: S02489; MUID:89076505; PMID:3202964
                             Risemura, S.; Saitch, E.; Ito, S.; Isemura, M.; Sanada, K.
J. Biochem. 96, 1311-1314, 1984
Yritile: Cystein S: a cystein broteinase inhibitor of human saliva.

A; File Cystein S: a cystein proteinase inhibitor of human saliva.

A; Reference number: A91981; MUD: 85104877; PulD: 6394600

A; Contents: annotation; inhibitor specificity
A; Contents: annotation; inhibitor specificity
B; Contents: Commun. 145, 1248-1253, 1987
A; Hawke, D.H.; Yuan, P.M.; M1800, K.J.; Hunkapiller, M.W.
Biochem. Biophys. Res. Commun. 145, 1248-1253, 1987
A; File: Identification of a long form of cystein from human saliva by rapid microbore by Reference number: A29603; MUD: 87270697; PMID: 3496880
                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: protein
A; Residues: 21-51 «HAW»
A; Remanaubbu, N.; Reddy, M.S.; Bergey, E.J.; Haraszthy, G.G.; Soni, S.D.; Levine, M.J.
Biochem. J. 280, 341-352, 1991
A; Title: Large-scale purification and characterization of the major phosphoproteins and
A; Reference number: S19279; MUID: 92082469; PMID: 1747107
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NyAlternate names: cystatin SA-I
C;Species: Homo sapiens (man)
C;Species: Homo sapiens (man)
C;Date: 28-May-1986 #sequence revision 08-Feb-1996 #text_change 08-Dec-2000
C;Accession: A28110; S02489; Ā29632; A01273; S19279
R;Al-Hashimi, I:, Dickinson, D.P.; Levine, M.J.
J. Biol. Chem. 263, 9381-9387, 1988
A;Title: Purification, molecular cloning, and sequencing of salivary cystatin SA-I.
A;Reference number: A28110; MUID:88243825; PMID:2837486
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C; Superfamily: cystatin; sinibitor; phosphoprotein; saliva; p; 1-20 Domain: signal pequence #status predicted <SIG>P; 21-141/Product: cystatin S #status predicted <MAT>P; 30-141/Domain: cystatin homology <CYS>P; 76-80/Region: inhibitory #status predicted
P; 94-104,118-138/Disulfide bonds: #status predicted
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47 ALHFAISEYNKATEDEYYRRPLQVLRAREQ 76
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    A;Residues: 29-134,'D',136-141 <ISE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Cross-references: GDB:136381
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Best Local Similarity
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A;Molecule type: DNA
A;Residues: 21-141 <582>
R;Saitoh, E.; Kim, H.S.; Smithies, O.; Maeda, N.
Gene 61, 329-338, 1987.
A;Title: Human cysteine-proteinase inhibitors: nucleotide sequence analysis of three meml
A;Reference number: A91589; MUID:88185836; PMID:3446578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Risemura, S.; Saitch, E.; Sanada, K.
EBSS Lett. 198, 145-149, 1986
A;Title: Characterization of a new cysteine proteinase inhibitor of human saliva, cystat)
A;Reference number: A01273; MUID:86164938; PMID:3514272
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A; Residues: 29-141 <ISE>
R; Ramasubbu, N.; Reddy, M.S.; Bergey, E.J.; Haraszthy, G.G.; Soni, S.D.; Levine, M.J.
Biochem. J. 280, 341-352, 1991
A; Title: Large-scale purification and characterization of the major phosphoproteins and
A; Reference number: S19279; MUID: 92082469; PMID: 1747107
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A, Fares. Sub.:119815; OMIM:123855
A; Map position: 20p11.2-20p11.2
C; Superfamily: Oystatin; Cystatin homology
C; Reywords: Oystatin; Cystatin homology
C; Reywords: Oystatin sub.
F; 1-20/Domain: signal sequence #status predicted <SIG>
F; 20-141/Product: Cystatin SA-I #status experimental <MATI>
F; 20-141/Product: Cystatin SN #status experimental <MATI>
F; 30-141/Domain: Cystatin homology <CYS>
F; 30-141/Domain: cystatin homology <CYS>
F; 40-141/Domain: Gystatin homology =CYS>
F; 40-141/Bomain: Cystatin homolo
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Pred. No. 1.5;
8; Mismatches 11; Indels
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A;Residues: 1-86,'I',88-141 <SAI>
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Best Local Similarity 36.7°
Matches 11, Conservative
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Oystatin S precursor - human

NyAlternate names: cystatin SA-III; salivary acidic protein-1

C;Species: Homo sapiens (man)

C;Species: Homo sapiens (man)

C;Date: 25-Feb-1885 #sequence revision 08-Feb-1996 #text change 16-Jul-1999

C;Accession: S17667; S16500; A01272; A29603; S19280; A56508

R;Bobek, L.A.; Aguirre, A.; Levine, M.J.

Biochem. J. 278, 627-635, 1991

A;Title: Human salivary cystatin S. Cloning, sequence analysis, hybridization in situ and A;Reference number: S17667; MuID:91378918; PMID:1898352
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A; Rosaidues: 1.141 - 8608>
A; Rosaidues: 1.141 - 8608>
A; Crosa-references: EMBL:X54667; NID:930365; PIDN:CAA38478.1; PID:930366
B; Lamkin, M.S.; Jensen, J.L.; Setayesh, M.R.; Troxler, R.F.; Oppenheim, F.G.
Arch: Biochem: Bloophys. 288, 644-670, 1891
A; Title: Salivary cystatin SA-III, a potential precursor of the acquired enamel pellicle
A; Reference number: S16500; MUID:91378515; PMID:1898055
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A Molecule type: protein
A Molecule type: protein
A Molecule type: protein
B 136-141 (IHU)
R 156mura, S : Saitch, E : Sanada, K.
J Biochem. 96, 489-498, 1984
A : Title: Isolation and amino acid sequence of SP-1, an acidic protein of human whole sal.
A; Reference number: A91985; MUID:85054716; PMID:6501254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          hypotherical protein HI0284 - Haemophilus influenzae (strain Rd KW20)
C,Species: Haemophilus influenzae
C,Species: Haemophilus influenzae
C,Species: Haemophilus influenzae
C,Accession: E64005
R;Pleischmann, R.D.; Adams, M.D.; White, O.; Clayton, R.A.; Kirkness, E.F.; Kerlavage, P. Gocayne, J.D.; Scott, J.; Shirley, R.; Liu, L.I.; Glodek, A.; Kelley, J.M.; Weidman, G. Gocayne, J.D.; Scott, J.; Shirley, R.; Liu, L.I.; Glodek, A.; Kelley, J.M.; Weidman, Science 269, 496-512, 1995
A,Authors: Gnehm, C.L.; McDonald, L.A.; Small, K.V.; Fraser, C.M.; Smith, H.O.; Venter, A,Fitle: Whole-genome random sequencing and assembly of Haemophilus influenzae Rd.
A,Reference number: A64000; MUD:95350630; PMID:7542800
A,Accession: E64005
A,Accession: E64005
A,Accession: Long A, Roman Langlation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A, Cross-references: GB:U32714; GB:L42023; NID:g1573241; PID:g1573253; TIGR:H10284
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C,Superfamily: Haemophilus influenzae hypothetical protein H10284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
31.6%; Score 59; DB 2; Length 139;
Best Local Similarity 45.0%; Pred. No. 1.1;
Matches 9; Conservative 8; Mismatches 3; Indels
                                                                                                                                                                                Length 132;
                                                                                                                                                                                                                                                         Indels
                                                                               F;1-21/Domain: signal sequence #status predicted <SIG>F;23-132/Domain: cystatin homology <CYS>
                                                                                                                                                                                        DB 2;
                                                                                                                                                                                                                                                                                                                                                                     1 KDSLQWITDQYNKESDDKYHFRIFRVLKVQRQV 33
                                                                                                                                                                                    Query Match 32.1%; Score 60; DB 2; Best Local Similarity 30.3%; Pred. No. 0.74; Matches 10; Conservative 14; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: DNA
A; Residues: 1-139 <TIGR>
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A,Molecule type: protein
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                                           C; Keywords: liver
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A; Residues: 1-12 < YAM>
A; Crose-references: D19628
A; Crose-references: D19628
A; Experimental source: liver
C; Comment: This protein is a homolog of mammalian cystatin C, and acts as an extracellul C; Superfamily: cystatin; cystatin homology
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A;Molecule type: protein
A;Residues: 29-38;76-80 <BIO>
A;Note: forms RSC-1, RSC-2 and RSC-3 with differing amino-terminals were found; a form
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A, Molecule type: protein
A, Residues: 1-111 «KOI»
A; Residues: 1-111 «KOI»
C; Superment: The intracellular role of this protein is the inhibition of intralysosomal | C; Superment: The intracellular role of this protein is the inhibition of intralysosomal | C; Superment: The intracellular role of this protein homology
C; Keywords: cystatin proteinase inhibitor
F; 81-111/Domain: cystatin homology «CYS»
F; 88-52/Region: inhibitory
F; 89-109/Disulfide bonds: #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C;Accession: JC2040
R;Koide, Y.; Noso, T.
Biosci. Biotechnol. Biochem. 58, 164-169, 1994
A;Title: The complete amino acid sequence of pituitary cystatin from chum salmon. A;Reference number: JC2040; MUID:94162738; PMID:7764512
A;Accession: JC2040
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JC2040
Cystatin - chum salmon
N/Alternate names: cysteine proteinase inhibitor
N/Alternate names: cysteine proteinase inhibitor
C;Species: Oncorhynchus keta (chum salmon)
C;Bate: 14-Jul-1994 #sequence_revision 14-Jul-1994 #text_change 16-Jul-1999
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C;Species: Oncorhynchus keta (chum salmon)
C;Daces: 26-Sep-1996 #sequence_revision 01-Nov-1996 #text_change 21-Jan-2000
C;Accession: JC4918
R;Yamashita, M.; Konagaya, S.
J. Blochen. 120, 483-487, 1996
A;Fitle: Molecular cloning and gene expression of chum salmon cystatin.
A;Reference number: JC4918; MUID:97058289; PMID:8902609
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                                                                                                                                                                             A,Gene: Cyss
A,Introns: 76/3; 114/3
A;Introns: 76/3; 114/3
A;Introns: 76/3; 114/3
A;Introns: 76/3; 114/3
A;Introns: 76/3; 114/3
C;Superfamily: cystatin; cystatin homology
C;Keywords: cystatin S #status predicted <SIG>F;28-141/Product: cystatin S, form RSC-3 #status predicted <MAT>F;29-141/Product: cystatin S, form RSC-3 #status predicted <MAT3>F;31-141/Product: cystatin B, form RSC-3 #status predicted <MAT2>F;31-141/Product: cystatin S, form RSC-1 #status predicted <MAT2>F;32-141/Product: cystatin S, form RSC-1 #status predicted <MAT1>F;94-104,118-138/Disulfide bonds: #status experimental
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            32.6%; Score 61; DB 2; Length 141; 34.4%; Pred. No. 0.58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11; Indels
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Best Local Similarity 30.3
Matches 10; Conservative
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A, Cross-references: EMBL: M59470; NID:g192911; PIDN: AAA63298.1; PID:g192912
                                 C;Superfamily: cystatin; cystatin homology
F;29-140/Domain: cystatin homology <CYS>
F;93-103,117-137/Disulfide bonds: #status predicted
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A;Residues: 'ISTDYLYISFEHETLSC',27-141 <SHA>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Status: preliminary
A;Molecule type: protein
A;Residues: 1-47 <CIM>
C;Superfamily: cystatin; cystatin homology
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A;Residues: 8-49 <ESN>
R;Esnard, A.; Esnard, F.; Guillou, F.; Gauthier, F.
R;Esnard, J00, 131-135, 1992
A;Title: adduction of the cysteine proteinase inhibitor cystatin C by rat Sertoli cells
A;Reference number: S21109; MUID:92225121; PMID:1563513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A36163
A36163
A36164
Systatin C precursor - mouse
C;Species: Mus musculus (house mouse)
C;Species: Mus musculus (house mouse)
C;Date: 14-Dec-1990 #sequence_revision 14-Dec-1990 #text_change 16-Jul-1999
C;Accession: A36163
E;Solem, M.; Rawson, C.; Lindburg, K.; Barnes, D.
Biochem. Biophes. Res. Commun. 172, 945-951, 1990
A;Title: Transforming growth factor beta regulates cystatin C in serum-free mouse embryc A;Reference number: A36163; MUID:91054522; PMID:2241983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cystatin C precursor - rat (fragment)
C;Species: Rattus norvegicus (Norway rat)
C;Species: Rattus norvegicus (Norway rat)
C;Date: 01-Dec-1993 #sequency (Norway rat)
C;Accession: 807085; 801337; $\overline{\text{S1109}}$
R;Cole, T.; Dickson, P.W.; Bsnard, P.; Averill, S.; Risbridger, G.P.; Gauthier, F.; Schr Bur J. Biochem. 186, 35-42, 1989
A;Title: The CDNA structure and expression analysis of the genes for the cysteine proteint A;Reference number: 807085; MUID:90092122; PMID:2689174
                                    A, Residues: 1-120 cESN>
A,Note: 43-Asn was also found
A,Note: the sequence from Fig. 2 is inconsistent with that from Fig. 1 in having 18-Ala
C,Superfamily: cystatin, cystatin homology
F;9-120/Domain: cystatin homology cCYS>
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A;Status: preliminary
A;Molecule type: mRNA
A;Molecule: 1-127 <CCL>
A;Cross-references: EMBL:X16957; NID:956041; PIDN:CAA34831.1; PID:9736290
R;Esnard, A; Esnard, F; Faucher, D.; Gauthier, F.
R;Esnard, A; Esnard, P.; Faucher, D.; Gauthier, F.
A;Title: Two rat homologues of human cystatin C.
A;Reference number: S01337; MUID:88313020; PMID:3044831
                                                                                                                                                                                                                                                                                               Gaps
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                                                                                                                                                                                                                          Query Match 35.8%; Score 67; DB 2; Length 120; Best Local Similarity 35.5%; Pred. No. 0.077; Matches 11; Conservative 10; Mismatches 10; Indels
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A;Residues: 8,'XX',11-20 <ES2>
C;Superfamily: cystatin; cystatin homology
K;Keywords: cysteine proteinase inhibitor
F;16-127/Domain: cystatin homology <CYS>
F;80-90,104-124/Disulfide bonds: #status predicted
                                                                                                                                                                                                                                                                                                                                                           3 SLQWITDQYNKESDDKYHFRIFRVLKVQRQV 33
                                                                                                                                                                                                                                                                                                                                                                                            3 SLQWITDQYNXESDDKYHFRIFRVLKVQRQV 33
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les 11, Conservative
             A, Molecule type: protein
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A,Status: preliminary
A,Molecule type: mRNA
A,Residues: 1-140 <SOL>
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Cystatin S precursor - rat
Cispecies: Rattus norvegicus (Norway rat)
Cipate: 17-Jul-1992 #sequence_revision 17-Jul-1992 #text_change 16-Jul-1999
C;Accession: JQ1470; A31891; $05252; $15132
R;Cox, J.L.; Shaw, P.A.
R;Cox, J.L.; Shaw, P.A.
A;Title: Structure, organization and regulation of a rat cysteine proteinase inhibitor-er
A;Reference number: JQ1470; MUID:92165056; PMID:1537554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Arch. Biochem. Biophys. 273, 245-253, 1989
A;Title: Amino acid sequence of an inducible cysteine proteinase inhibitor (cystatin) fro
A;Reference number: S05252; MUID:89334379; PMID:2757396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: protein
A; Residues: 28-113, 'QE', 116-141 <BED>
A; Residues: 28-113, 'QE', 116-141 <BED>
A; Residues: 28-113, 'QE', 116-141 <BED>
A; Notaliura, T: Ishibashi, K: Abb, K.
B; Nishiura, T: Ishibashi, K: Abb, K.
Biochim. Biophys. Acta 1077, 346-354, 1991
A; Title: Isolation of three forms of cystatin from submandibular saliva of isoproterenol-A; Reference number: S15132; WUID:91230145; PMID:1903068
A; Accession: S15132
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                                                                                                                                                                                                                                                                                                                                                                               Cystatin C, parotid glands - bovine (fragment)
C;Species: Bos primigenius taurus (cattle)
C;Species: Bos primigenius taurus (cattle)
C;Accession: 28-Oct-1996 #sequence_revision 13-Mar-1997 #text_change 07-May-1999
C;Accession: S6326
R;Cimerman, N.; Drobnic Kosorok, M.; Korant, B.D.; Turk, B.; Turk, V.
Biol. Chem. Hoppe-Seyler 377, 19-23, 1996
A;Title: Characterization of cystatin C from bovine parotid glands: cysteine proteinase A;Reference number: S62326; MUID:97083236; PMID:8929810
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*Residues: 1-141 < COX>

A; Residues: 1-141 < COX>

A; Cross-references: GB:M75281; NID:g294537; PIDN:AAA41068.1; PID:g294538

R; Shaw, P.A.; Cox, J.L.; Barka, T.; Naito, Y.

Blol. Chem. 263, 18133-18137, 1988

A; Title: Cloning and sequencing of CDNA encoding a rat salivary cysteine A; Reference number: A31891; MUID:89053983; PMID:3263967
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Query Match 35.8%; Score 67; DB 2; Length 140; Best Local Similarity 35.5%; Pred. No. 0.091; Matches 11; Conservative 10; Mismatches 10; Indels
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A;Molecule type: protein
A;Residues: 27-76 <BRZ>
R;Olafsson, I.; Gudmundsson, G.; Abrahamson, M.; Jensson, O.; Grubb, A.
Scand. J. Clin. Lab. Invest. 50, 85-93, 1990
A;Title: The amino terminal portion of cerebrospinal fluid cystatin C in hereditary cyst
A;Reference number: A60552; MUID:90193615; PMID:2315647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Reference number: S01462
A;Contents: annotation; disulfide bonds
R;Berti, P.J.; Storer, A.C.
Biochem. J. 302, 411-416, 1994
A;Title: Local pH-dependent conformational changes leading to proteolytic susceptibility
A;Reference number: S55305; MUID:94379969; PMID:8092991
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A,Residues: 27-49;106-146 <BER>
C,Comment: This protein is found in the post-gamma-globulin fraction of cerebrospinal flu
f patients with certain autoimmune diseases.
C,Comment: This protein is an inhibitor of cysteine proteinases and may serve an importar
C,Comment: A mutant cystatin C, with 94-Gln, is deposited in hereditary cerebral hermorri
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R;Esnard, F.; Esnard, A.; Faucher, D.; Capony, J.P.; Derancourt, J.; Brillard, M.; Gauth)
Bjol. Chem. Hoppe-Seyler 371(Suppl.), 161-166, 1990
A;Title: Rat cystatin C: the complete amino acid sequence reveals a site for N-glycosylat A;Reference number: S10587; WUID:90380276; PMID:2400577
A;Accession: S10587
A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Note: truncated forms with amino ends at positions 35 and 36 of the precursor were als R;Grubb, A.; Lofberg, H.; Barrett, A.J. FEBS Lett. 170, 370-374, 1984
A;Title: The disulphide bridges of human cystatin C (gamma-trace) and chicken cystatin.
                                                                                                                                                                                                                                                                                   A, Accession: A60552
A, Molecule type: protein
A, Molecule type: Milian to the autosomal
a, Molecule this protein, purified from cerebrospinal fluid of patients with the autosomal
a, Popovic, T.; Brzin, J.; Ritonja, A.; Turk, V.
B, Popovic, T.; Brzin, J.; Ritonja, A.; Turk, V.
A, Popovic, T.; Brzin, J.; Ritonja, A.; Turk, V.
A, Fitle: Different forms of human cystatin C.
A, Reference number: S10607; MUID:91025625; PMID:2222856
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C;Species: Rattus sp. (rat)
C;Date: 21-Nov-1993 #sequence_revision 03-Nov-1995 #text_change 16-Jul-1999
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A;Introns: 81/3; 119/3
A;Introns: 81/3; 119/3
C;Superfamily: cystatin; cystatin homology
C;Superfamily: cystaine proteinase inhibitor; extracellular proteinase amyloid; cysteine proteinase inhibitor; extracellular proteins f;1-26/Domain: signal sequence #status predicted <SIG>F;27-146/Product: cystatin C #status experimental <MAT>F;35-146/Domain: cystatin homology <CXS>F;81-85/Region: inhibitory #status predicted F;29/Modified site: hydroxyproline (Pro) (partial) #status experimental F;99-109,123-143/Disulfide bonds: #status experimental
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52 ALDFAVGEYNKASNDMYHSRALQVVRARKQI 82
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A;Residues: 27-53 <POP>
A;Experimental source: urine, kidney disease
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les 11; Conservative
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Matches
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A;Accession: S00004
A;Accession: S00004
A;Residues: 1-146 <AB2>
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R;Turk, V.; Briin, J.; Longer, M.; Ritonja, A.; Bropkin, M.; Borchart, U.; Machleidt, W.
R;Turk, V.; Brzin, J.; Longer, M.; Ritonja, A.; Bropkin, M.; Borchart, U.; Machleidt, W.
A;Title: Protein inhibitors of cysteine proteinses. III. Amino-acid sequence of cystati
A;Reference number: S01461; MUID:84110059; PMID:6662498
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A;Cross-references: GB:X61681; NID:g30367; PIDN:CAA43856.2; PID:g4490944
A:Note: the cystatin C gene isolated from the brain of an Icelandic patient with heredit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R;Saitoh, E.; Sabatini, L.M.; Eddy, R.L.; Shows, T.B.; Azen, E.A.; Isemura, S.; Sanada, Biochem. Biophys. Res. Commun. 162, 1324-1331, 1989
A;Title: The human cystatin C gene (CST3) is a member of the cystatin gene family which A;Reference number: A33400; MUID:89350949; PMID:2764935
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Afresidues: 1-24, 'T',26-146 <SAI>
A;Residues: 1-24, 'T',26-146 <SAI>
A;Cross-references: GB:M27899; GB:M27890; GB:M27891; NID:g181385; PIDN:AAA52164.1; PID:g
R;Ghiso, J.; Cowan, N.; Frangione, B.
Biol. Chem. Hoppes-Seylers 369, 2055-208, 1988
Biol. Chem. Hoppes-Seylers 369, 2055-208, 1988
A;Title: Isolation of a sequence encoding human cystatin C. Conservation of exon-intron
A;Reference number: S02751; MUID:89076507; PMID:3264504
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A; Residues: 82-119 cdf2>
A; Cross-references: EMBL:M27769
A; Note: the authors translated the codon ACC for residue 105 as Thr; the sequence shown
R; Grubb, A.; Lofberg, H.
Proc. Natl. Acad. Sci. U.S.A. 79, 3024-3027, 1982
A;Title: Human gamma-trace, a basic microprotein: amino acid sequence and presence in th
A; Reference number: A01270; MUID:82222268; PMID:6283552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Cross-references: EMBL:X05607; NID:g30371; PIDN:CAA29096.1; PID:g755738
R;Levy, E.; Lopez-Otin, C.; Ghiso, J.; Geltner, D.; Frangione, B.
J. Exp. Med. 169, 1771-1778, 1989
A;Title: Stroke in Icelandic patients with hereditary amyloid angiopathy is related to A;Reference number: JL0095; MUID:89235594; PMID:2541223
A;Accession: JL0095
A;Molecule type: DNA
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A, Molecule type: protein
A, Residues: 27-131, /5',133-146 <GRU>
B, Ghiso, J; Jensson, O.; Frangione, B.
Proc. Natl. Acad. Sci. U.S.A. 83, 2974-2978, 1986
A; Title: Amyloid fibrils in hereditary cerebral hemorrhage with amyloidosis of Iceland
A, Reference number: A25434; MUID:86206076; PMID:3517880
                                                                                                                                                                                                                                                                                                                                                                   A;Accession: S10216
A;Molecule type: DNA
A;Residues: 1-146 <ABL.
A;Coss-resi-reces: EMBL:X52255; NID:g30257; PIDN:CAA36497.1; PID:g296643
R;Abrahamson, M.; Grubb, A.; Olafsson, I.; Lundwall, A.
FEBS Lett. 216, 229-233, 1987
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A;Molecule type: protein
A;Residues: 27-73 <TUR>
R;Brzin, J.; Popovic, T.; Turk, V.
Biochem. Biophys. Res. Commun. 118, 103-109, 1984
A;Title: Human cystatin, a new protein inhibitor of cysteine proteinases.
A;Reference number: A32732; MUID:84128015; PMID:6365094
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A,Status: preliminary
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A; Mesidues: 24-139 <SCH>
A; Residues: 28-139 <SCH>
A; Residues: 28-139 <SCH>
B; Puzia J; Longer, M.; Ritonja, A.; Bropkin, M.; Borchart, U.; Machleidt, W. Hoppe-Seyler's Z. Physiol. Chem. 364, 1487-1496, 1983
A; Title: Protein inhibitors of cysteine proteinases. III. Amino-acid sequence of cystati A; Reference number: S01461; MUID:84110059; PMID:6662498
A; Molecule type: protein
A; Molecule type: protein
A; Molecule type: protein
Biochem. J. 211, 129-136, 1983
A; Mitle: Cystatin, a protein inhibitor of cysteine proteinases. Improved purification fr A; Reference number: A37514; MUID:83256421; PMID:6409085
A; Contents: annotation; characterization of protein
R; Grubb, A.; Lofberg, H.; Barrett, A.J.
FEBS Lett. 170, 370-374, 1984
A; Title: The disulphide bridges of human cystatin C (gamma-trace) and chicken cystatin.
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A; Molecule type: protein
A; Residues: 25-114 . c185.
A; Residues: 25-114 . c182.
A; Residues: 25-114 . c182.
A; Residues: 25-114 . c182.
C; Genetics: 25-114 . c182.
A; Reference number: A41422; MUID:88139220; PMID:3436950
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N.Alternate names: cystatin; cysteine proteinase inhibitor; egg-white cystatin
C;Species: Gallus gallus (chicken)
C;Species: Gallus gallus (chicken)
C;Species: Gallus gallus (chicken)
C;Species: Gallus gallus (chicken)
C;Species: Savaguence revision 12-Apr-1996 #text change 29-Oct-1999
C;Accession: A34456; A01274; S01461; S48159; S04008; JN0789
A;Title: Chicken egg white cystatin. Molecular cloning, nucleotide sequence, and tissu
A;Reference number: A34456; MUID:90008873; PMID:2793849
A;Residues: 1.139 coOL-
A;Residues: 1.139 coOL-
A;Residues: 1.139 coOL-
A;Cession: A34456; MUID:90008873; PMID:2793849
A;Residues: T.139 coOL-
A;Residues: T.139 coOL-
A;Cession: A34456; MUID:90008873; PMID:2793849
A;Residues: A34456; MUID:90008873; PMID:2793849
A;Residues: A34456; MUID:90008873; PMID:2793849
A;Residues: A34456; MUID:90008873; PMID:2793849
A;Residues: A34456; MUID:90008873; PMID:27937
A;Cession: A34456; MUID:90008873; PMID:27937
A;Cession: A34456; MUID:90008873; PMID:6712297
A;Cession: A34456; MUID:9000873; PMID:6712297
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A,Map postition: 20pl.1.2-20pl.1.2-
C:Superfamily: cystatin; cystatin homology
F;30-141/Domain: cystatin homology <CYS-
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A;Accession: S04008
A;Molecule type: protein
A;Rocession: S07-14 ciabs.
B;Colella, R.; Bird, J.W.C.
Gene 130, 175-181, 1993
A;Title: Isolation and characterization of the chicken cystatin-encoding gene: Mapping to A;Title: Isolation and characterization of the chicken cystatin-encoding gene: Mapping to A;Accession: JN0789; MUID:93366172; PMID:8359684
A;Accession: JN0789
A;Molecule type: DNA
A;Residues: 1-139 <CO2>
A;Molecule type: DNA
A;COSB-references: GB:M95725
A;Cross-references: GB:M95725
A;Cross-references
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FEBS Lett. 186, 41-45, 1985
A;Title: Complete amino acid sequence of bovine colostrum low-M-r cysteine proteinase in
A;Reference number: A01271; WUID:85231205; PMID:3891407
                                                                                                                               3
A; Molecule type: protein
A; Residues: 24.139 cAUE>
R; Laber, B.; Krieglstein, K.; Henschen, A.; Kos, J.; Turk, V.; Huber, R.; Bode,
FBBS Lett. 248, 162-168, 1989
A; Title: The cysteine proteinase inhibitor chicken cystatin is a phosphoprotein.
A; Reference number: S04008; MUID: 89252033; PMID: 2721673
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C; Superfamily: cystatin; cystatin homology
C; Superfamily: cystatin; cystatin homology
C; Superdamily: cystatin; cystatin proteinase inhibitor; egg white; phosphoprotein
C; Styords: cystatin sequence #status predicted <SIG>F; 1-23/Domain: signal sequence #status predicted <SIG>F; 2-139/Product: cystatin, long form #status experimental <CYLP>F; 30-139/Domain: cystatin, short form #status experimental <CYSP>F; 2-139/Product: cystatin, short form #status experimental <CYSP>F; 76-80/Region: inhibitory #status predicted
F; 94-104,118-138/Disulfide bonds: #status experimental
F; 103/Binding site: phosphate (Ser) (covalent) (partial) #status experimental
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C;Date: 28-Feb-1986 #sequence_revision 28-Feb-1986 #text_change 06-Dec-1996
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39.0%; Score 73; DB 1; Length 139;
Best Local Similarity 41.9%; Pred. No. 0.014;
Matches 13; Conservative 9; Mismatches 9; Indels
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A Molecule type: protein
A Molecules: 1-12 < HTR>
C Superfeanily: cystatin; cystatin homology
C; Keywords: colostrum; cysteine proteinase inhibitor
F;2-112/Domain: cystatin homology < CYS>
F;48-52/Region: inhibitory #status predicted
F;66-76,90-110/Disulfide bonds: #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17 QEALSFAVSEFNKRSNDAYQSRVVRVKAKKQV 49
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Matches 11; Conservative 12; Mismatches
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GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
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OM protein - protein search, using sw model

March 18, 2004, 14:06:15; Search time 6.73611 Seconds (without alignments) 499.799 Million cell updates/sec Run on:

US-09-941-314-8

Title: Perfect score:

1 KDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTD 35 Sequence:

Scoring table:

BLOSUM62 Gapop 10.0 , Gapext 0.5

283366 Total number of hits satisfying chosen parameters:

283366 segs, 96191526 residues

Searched:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database

PIR 78:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	Description	cystatin-related e	cystatin SA precur		•	cystatin C precurs	ပ	cystatin C precurs	U	ပဲ	S	•	cystatin precursor	hypothetical prote	cystatin S precurs	cystatin SN precur	cystein proteinase	onchocystatin - ne	nucleoprotein N -	probable response	hypothetical prote	cystatin - puff ad	mercuric resistanc	regulatory protein	merR1 protein (imp	hypothetical prote	rhamnosyltransfera	DAL82 protein - ye	dimethylamine dehy	hypothetical prote
SUMMAKIES	Ω	A45361	B29632	прсн	UDBO	UDHO	S10587	S07085	A36163	862326	JQ1470	JC2040	JC4918	E64005	UDHUP1	UDHUP2	T07822	A43428	VHVULV	A71678	T00398	A28793	A32239	T45509	T44501	T33117	A86650	A39195	579	T27401
	ength DB	139 2						127 2	•	47 2					141 1				235 1	•	•			132 2		•		S	9	272 2
ď	f Query Match Length	41.2	39.6	39.0		36.9	35.8	35.8	35.8	35.3	32.6	32.1	32.1	31.6	31.0	31.0	29.9	29.9	28.9	28.9	28.9	28.3	28.3	28.3	28.3	28.3	28.3	28.1	28.1	27.8
	Score	77	74	73	70	69	67	67	67	99	61	9	9	59	28	58	26	56	54	54	54	53	53	53	53	53	53	52.5	ď	52
	Result No.	1 1	7	m	4	S	9	7	8	σ	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25			28	

hypothetical prote cellulase (EC 3.2.	utrophin	cystatin p	hypothetica	phosphogluc	outer capsic	hypothetical	conserved dom	hypothetical p	conserved hypo	hypothetical p	protein F14H8.1 [i	hypothetical p	hypothetical p	glutamy1-tRNA
A97740 S54744	S28381	JC4536	E95043	G97913	PSXRA4	T33641	F95121	B97991	E82710	D86168	H89308	D64151	T20938	A89820
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450	3433	133	474	474	505	394	125	150	160	393	424	430	471	484
60 60	. 60	m	m.	m.	m	0	۲.	۲.	۲.	۲.	۲.	۲.	۲.	_
27.8	27	27	27	27	27	27	56	56	56	56	56	56	26	56
52	25	51	51	21	21	50.5	20	20	20	20	20	20	20	20
30	35	33	34	32	36	37	38	39	40	41	42	43	44	45

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cystatin-related epididymal specific protein - mouse (fragment)

related to the cystatin family is

C;Species: Mus musculus (house mouse)
C;Species: Mus musculus (house mouse)
C;Date: 10-Jun-1993 #sequence_revision 18-Nov-1994 #text_change 05-Nov-1999
C;Date: 10-Jun-1993 #sequence_revision 18-Nov-1994 #text_change 05-Nov-1999
C;Date: 10-Jun-1993 #sequence_revision 18-Nov-1994 #text_change 05-Nov-1999
R;Cornwall, G.A.; Orgebin-Crist, M.C.; Hann, S.R.
Mol. Endocrinol. 6, 1653-1664, 1992
A;Title: The CRES gene: a unique testis-regulated gene related to the cystatin f
A;Reference number: A45361; MUID:93078799; PMID:1280328
A;Accession: A45361; MUID:93078799; PMID:1280328
A;Accession: A45361; MUID:93078799; PMID:1280328
A;Residues: 1-139 <COR>
A;Residues: 1-139 <COR>
A;Residues: 1-139 <COR>
A;Rote: sequence extracted from NCBI backbone (NCBIP:118813)
C;Superfamily: cystatin; cystatin homology <CYS>
F;28-139/Domain: cystatin homology <CYS>

Gapa ö Length 139; Score 77; DB 2; Length 135 Pred. No. 0.0041; 9; Mismatches 12; Indels Query Match
Best Local Similarity 40.0%;
Matches 14; Conservative

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35 1 KDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTD

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43 KQCVWFAMKEYNKESEDKYVFLVDKILHAKLQITD 77 셤

cystatin SA precursor - human

Cyspecies: Homo sapiens (man)
Cyspecies: Homo: B29632; S02490; A41422; B27015
R;Saitch, E.; Kim, H.S.; Smithies, O.; Maeda, N.
Gene 61, 329-338, 1987
A;Title: Human cysteine-proteinase inhibitors: nucleotide sequence analysis of three memb A;Reference mumber: A91589; MUID:88185836; PMID:3446578
A;Reference mumber: A91589; MUID:88185836; PMID:3446578
A;Reference mumber: A91589; MUID:88185836; PMID:3446578
A;Residues: 1-141 <SAI>
A;Coss.references: GB:M19673; GB:M19170; NID:g186403; PIDN:AAA36116.1; PID:g386826
A;Residues: 1-141 <SAI
A;Residues: 1-141 <SAI
A;References: GB:M19673; GB:M19170; NID:g186403; PIDN:AAA36116.1; PID:g386826
A;Cross.references: GB:M19673; GB:M19170; NID:g186403; PIDN:AAA36116.1; PID:g386826
A;Coss.references: GB:M19673; GB:M19170; NID:g186403; PIDN:AAA36116.1; PID:g386826
A;Coss.references: GB:M19673; GB:M19170; NID:g186403; PIDN:AAA36116.1; PID:g386826
A;Reference number: S02489; MUID:89076505; PMID:3202964
A;Recession: S02490
A;Residues: 21-414 <SA2>
R;Resmura, S.; Saitch, B.; Sanada, K.

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  Gaps
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TITLE OF INVENTION: Production and use of Modified Cystatins
FILLS REFERENCE: 58069
CURRENT APPLICATION NUMBER: US/09/775,932
CURRENT FILING DATE: 2001-02-02
PRIOR PELING DATE: 1999-08-05
PRIOR APPLICATION NUMBER: 60/095,503
PRIOR PILING DATE: 1998-08-05
NUMBER OF SEQ ID NOS: 32
NUMBER OF SEQ ID NOS: 32
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 8
LENGTH: 121
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                                                                                                                                                                                        Sequence 2608, Application US/10264049
; Publication No. US2004000557941
; GENERAL INFORMATION:
    APPLICANT: BITS et al.
    TITLE OF INVENTION: Nucleic Acids, Proteins, and Antibodies
    TITLE OF INVENTION: Nucleic Acids, Proteins, and Antibodies
    FILE REFERENCE: PA133P1
; CURRENT APPLICATION NUMBER: US/10/264,049
; CURRENT FILING DATE: 2002-10-04
; PRIOR APPLICATION NUMBER: PCT/US01/18569
; PRIOR APPLICATION NUMBER: PC6-07
; PRIOR APPLICATION NUMBER: US 60/209,467
; PRIOR FILING DATE: 2000-06-07
; NUMBER OF SEQ ID NOS: 4360
; SEQ ID NO 2668
; SEQ ID NO 2668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
42.2%; Score 79; DB 15; Length 181;
Best Local Similarity 42.4%; Pred. No. 0.0051;
Matches 14; Conservative 9; Mismatches 10; Indels
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  0; Indels
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27 ALHFVISEYNKATEDEYYRRLLRVLRAREQI 57
  Mismatches
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Patent No. US20020137671A1
GENERAL INFORMATION:
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                                         1 KDSLQWITDQYNKESDDK 18
                                                                         19 KDSLQWITDQYNKESDDK 36
  18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: PRT
, ORGANISM: Homo sapiens
US-10-264-049-2608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: PRT
CORGANISM: Homo sapiens
US-09-775-932-8
                                                                                                                                                        RESULT 14
US-10-264-049-2608
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US-09-775-932-8
  Matches
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Search completed: March 18, 2004, 14:30:53 Job time : 21.1806 secs

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Gaps

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Sequence 6, Application US/09941314

Sequence 6, Application US/09941314

Patent No. US20020142396A1

GENERAL INFORMATION:

APPLICANT: ZymoGenetics, Inc.

TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to

TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein

FILE REFERENCE: 00-81PC

CURRENT APPLICATION NUMBER: US/09/941,314

CURRENT FILING DATE: 2001-08-29

PRIOR APPLICATION NUMBER: 60/230,230

PRIOR PAPLICATION NUMBER: 60/230,230

NUMBER OF SEQ ID NOS: 19

SOFTWARE: FastSEQ for Windows Version 4.0

SEQ ID NO 6

LENTH: 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
FILE REPERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/08/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR APPLICATION NUMBER: 60/230,230
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                            Length 52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 52.9%; Score 99; DB 9; Length 18; 100.0%; Pred. No. 7.5e-07; ive 0; Mismatches 0; Indels
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Best Local Similarity 100.0%; Pred. No. 4.1e-09;
Matches 23; Conservative 0; Mismatches 0;
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100.0%; Pred. No. 1.6e-06;
                  PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SEQ ID NO 14
LENGTH: 52
                                                                                                                                                                                                                                                                                                                                                                                 13 KESDDKYHFRIFRVLKVQRQVTD 35
                                                                                                                                                                                                                                                                                                                                                                                                              1 KESDDKYHFRIFRULKVQRQVTD 23
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Patent No. US20020142396A1
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2001-08-29
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ORGANISM: Homo sapiens
                                                                                                                                                                       TYPE: PRT
ORGANISM: Homo sapiens
US-09-941-314-14
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US-09-941-314-6
CURRENT FILING DATE:
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Best Local Similarity
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Best Local Similarity
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US-09-941-314-6
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                                                                                                          Sequence 15. Application US/09941314

Batent No. US20020142396A1

GENERAL INFORMATION:

APPLICANT: ZymoGenetics, Inc.

TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
FILE REFERENCE: 00-81PC

CURRENT APPLICATION NUMBER: US/09/941,314

CURRENT FILING DATE: 2001-08-29

PRIOR APPLICATION NUMBER: 60/230,230

PRIOR PLIGHT DATE: 2001-09-01

NUMBER OF SEQ ID NOS: 19

SOFTHARE: PRETSEQ for Windows Version 4.0

LENGTH: 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 10. Application US/09941314

Sequence 10. Application US/09941314

Sequence No. US20020142396A1

GENERAL INFORMATION:

TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein

TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein

FILE REFERENCE: 00-81PC

CURRENT FILING DATE: 2001-08-29

PRIOR FILING DATE: 2001-08-01

NUMBER OF SEQ ID NOS: 19

SOFTWARE: PastSEQ for Windows Version 4.0

LENGTH: 46
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 73.3%; Score 137; DB 9; Length 80; Best Local Similarity 100.0%; Pred. No. 2.1e-11; Matches 26; Conservative 0; Mismatches 0; Indels
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Patent No. US20020142396A1

GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
FILE REFERENCE: 00-01PC

CURRENT APPLICATION NUMBER: US/09/941,314
  DQYNKESDDKYHFRIFRVLKVQRQVTD 27
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ORGANISM: Homo sapiens
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US-09-941-314-10
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APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
FILE REFERENCE: 00-681PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR PILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
: SEQ ID NO 9
LENGTH: 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 27;
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CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SEQ ID NO: 19
SEQ ID NO: 19
ILENGTH: 49
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COTHER INFORMATION: EXPRESSED IN BT474, SIGNAL = 0.96
COTHER INFORMATION: EST HUMAN HIT: A1208857.1, EVALUE 5.00,
COTHER INFORMATION: SWISSPROT HIT: O66676, EVALUE 1.00e-01
                                                                                                                           Query Match 92.0%; Score 172; DB 9; L
Best Local Similarity 100.0%; Pred. No. 1.9e-16;
Matches 32; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           76.5%; Score 143; DB 9; I
100.0%; Pred. No. 1.9e-12;
iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ch 76.5%; Score 143; DB 9; I
1 Similarity 100.0%; Pred. No. 9.8e-13;
27; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                         19 KDSLOWITDOYNKESDDKYHFRIFRVLKVQRQ 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9 DQYNKESDDKYHFRIFRVLKVQRQVTD 35
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Patent No. US20020142396A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                Sequence 9, Application US/09941314
Patent No. US20020142396A1
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Best Local Similarity 100.0%; P:
Matches 27; Conservative 0;
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ORGANISM: Homo sapiens
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Best Local Similarity
Matches 27; Conserv
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                                                                                                                                              92.0%; Score 172; DB 9; Length 50; 100.0%; Pred. No. 1.9e-16; ive 0; Mismatches 0; Indels
OTHER INFORMATION: EXPRESSED IN BT474, SIGNAL = 1.1
OTHER INFORMATION: EXPRESSED IN HEART, SIGNAL = 1.5
OTHER INFORMATION: EXPRESSED IN HELD, SIGNAL = 1.3
OTHER INFORMATION: EXPRESSED IN HELLOO, SIGNAL = 1.2
OTHER INFORMATION: EST HUMAN HIT: ALZ00857.1, EVALUE 5.00c
OTHER INFORMATION: SWISSPROT HIT: 060676, EVALUE 1.00e-01
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SOFTWARE: Annomax Sequence Listing Engine vers. 1.1
SEQ ID NO 49346
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                                                                                                                                                                                                                       1 KDSLQWITDQYNKESDDKYHFRIFRVLKVQRQ 32
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Patent No. US20020048763A1
                                                                                                                                                                                  32; Conservative
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ORGANISM: Homo sapiens
                                                                                                                                                  Query Match
Best Local Similarity
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US-09-864-761-48936
                                                                                         ; OTHER INFORMATIOUS-09-864-761-34822
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Length 137;

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 4, Application US/09941314;
Sequence 4, Application US/09941314;
Patent No. US20020142396A1;
GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein;
FILE REPERBENCE: 00-01PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT PILING DATE: 2001-08-29;
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR PILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 4
LENGTH: 117
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Sequence 2, Application US/09941314;
Parent No. US20020142396A1;
GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.;
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein;
FILE REPERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29;
PRIOR PPLICATION NUMBER: 60/230,230
PRIOR PLICATION NUMBER: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
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100.0%; Pred. No. 4e-18;
tive 0; Mismatches 0; Indels
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                                                                                                                                                                                                                                                                                                                                                 0; Mismatches
            CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO
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Best Local Similarity 100.
Matches 35; Conservative
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ORGANISM: Homo sapiens
                                                                                                                                                                               LENGTH: 115
TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: PRT
ORGANISM: Homo sapiens
US-09-941-314-4
FILE REFERENCE: 00-81PC
                                                                                                                                                                                                                                                                                                                            Best Local Similarity
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US-09-941-314-4
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APPLICANT: Penn, Sharron G.
APPLICANT: Rank, David R.
APPLICANT: Rank, David R.
APPLICANT: Rank, David R.
APPLICANT: Rank, David R.
APPLICANT: Hancal, David R.
APPLICANT: Chen, Wensheng
TITLE OF INVENTION: HUMBAN GENOME-DERIVED SINGLE EXON NUCLEIC ACID PROBES USEPUL FOR TITLE OF INVENTION: HUMBAN GENOME-DERIVED SINGLE EXON NUCLEIC ACID PROBES USEPUL FOR TITLE OF INVENTION: HUMBER: US 60/180,312
FILE REFERENCE: Aeomica-X-1
CURRENT PILLING DATE: 2000-02-04
FRIOR APPLICATION NUMBER: US 60/180,312
PRIOR APPLICATION NUMBER: US 60/207,456
PRIOR APPLICATION NUMBER: US 60/207,456
PRIOR PILLING DATE: 2000-06-03
PRIOR PILLING DATE: 2000-06-03
PRIOR PILLING DATE: 2000-06-03
PRIOR PILLING DATE: 2000-06-03
PRIOR APPLICATION NUMBER: DET/USO1/00666
PRIOR PILLING DATE: 2001-01-00
PRIOR PILLING DATE: 2001-01-30
PRIOR APPLICATION NUMBER: PCT/USO1/00667
PRIOR PILLING DATE: 2001-01-30
PRIOR PILLING DATE: PCT/USO1/00669
PRIOR PILLING DATE: 2001-01-30
PRIOR PILLING DATE: PCT/USO1/00669
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THER INFORMATION: EXPRESSED IN BONG MARROW, SIGNAL = 1.5

OTHER INFORMATION: EXPRESSED IN LUNG, SIGNAL = 1.5

OTHER INFORMATION: EXPRESSED IN BRAIN, SIGNAL = 1.9

OTHER INFORMATION: EXPRESSED IN BLACENTA, SIGNAL = 1.6

OTHER INFORMATION: EXPRESSED IN ADULT LIVER, SIGNAL = 1.6

OTHER INFORMATION: EXPRESSED IN FETAL LIVER, SIGNAL = 1.3
                                                                                      Indels
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PRIOR PILITOR DATE: 2001-01-30
PRIOR APPLICATION NUMBER: US 60/234,687
PRIOR FILING DATE: 2000-09-21
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PRIOR FILING DATE: 2000-06-30
PRIOR FILING DATE: 2001-01-29
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LENGTH: 50
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Best Local Similarity 100.0%; Pred. No. 4.7e-18;
Matches 35; Conservative 0; Mismatches 0;
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                                                                                                                                                                                                                                                       44 KDSLOWITDOYNKESDDKYHFRIFRVLKVOROVTD 78
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PRIOR FILING DATE: 2001-01-30
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PRIOR APPLICATION NUMBER: PCT/USO1/00661
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Patent No. US20020048763A1
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ORGANISM: Homo sapiens
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March 18, 2004, 14:15:06; Search time 21.1806 Seconds (without alignments) 427.913 Million cell updates/sec
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GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
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187
1 KDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTD 35
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Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                  OM protein - protein search, using sw model
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Gapop 10.0 , Gapext 0.5
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Maximum DB seq length: 200000000
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Perfect score:
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

					SUMMARIES		
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No.	Score	Match	Match Length DB	DB	ID	Description	
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~	187	100.0		6	US-09-941-314-3	Sequence 3, Appli	
m	187	100.0		σ	US-09-941-314-4	Sequence 4, Appli	
4	187	100.0	137	σ	US-09-941-314-2	Sequence 2, Appli	
Ŋ	172	92.0		6	US-09-864-761-34822	Sequence 34822, A	
9	172	92.0	20	6	US-09-864-761-48936	Sequence 48936, A	
7	143	76.5	27	σ	US-09-941-314-9	Sequence 9, Appli	
6 0	143	76.5	49	9	US-09-941-314-13	Sequence 13, Appl	
σ	137	73.3	80	თ	US-09-941-314-15	Sequence 15, Appl	
10	125	66.8	46	0	US-09-941-314-10	Sequence 10, Appl	
11	119	63.6	52	σ	US-09-941-314-14	Sequence 14, Appl	
12	66	52.9		σ	US-09-941-314-7	7, 7	
13	66	52.9		σ	US-09-941-314-6	Sequence 6, Appli	
14	79	42.2	181	15	US-10-264-049-2608	Sequence 2608, Ap	
15	74	39.6		6	US-09-775-932-8	Segmence 8. Appli	

16 74 39.6 141 8 US-08-849-303-24 17 39.6 141 8 US-09-940-497-6 19 139.0 139 8 US-09-940-497-6 20 73 39.0 139 8 US-09-940-497-6 21 70 37.4 118 WS-09-940-303-16 23 22 69 36.9 120 9 US-09-96-834-4 23 36.9 120 9 US-09-96-834-4 24 69 36.9 146 9 US-09-96-834-3 25 69 36.9 146 9 US-09-96-849-3 33 26 36.9 146 9 US-09-96-437-3 36 36 31 47 32 36 36 31 47 32 36 36 31 47 32 36 36 31 36 36 36 36 36 36 36 36 36 36 36<	4 .00 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Sequence 23, Appl Sequence 20, Appl Sequence 22, Appl Sequence 4, Appli Sequence 21, Appli Sequence 21, Appl Sequence 22, Appl
74 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	B US-08-849-303-24 9 US-09-940-497-6 9 US-09-960-891-15 9 US-09-969-834-4 9 US-09-969-834-4 9 US-09-775-932-2 9 US-09-775-932-2 9 US-09-775-932-2 9 US-09-775-932-2 14 US-09-940-497-3 14 US-10-329-428-3 14 US-10-329-428-3 15 US-09-940-497-3 16 US-09-940-497-3 17 US-09-740-638-2 18 US-08-849-303-19 18 US-08-849-303-18 14 US-10-35-148-2 14 US-10-376-564-4 14 US-10-376-564-4 14 US-10-376-564-4	8 US-08-849-303- 9 US-09-775-932- 9 US-09-775-932- 9 US-09-775-932- 8 US-08-849-303- 8 US-08-849-303- 9 US-08-849-303-
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ALIGNMENTS

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                                                                              APPLICATION Mammalian Cystatin-8 and Its Use to TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein; FILE REFERENCE: 00-812C
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR PILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SEQ ID NOS: 19
SEQ ID NOS: 18
LENGTH: 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 3, Application US/09941314
Patent No. US20020142396A1
GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Proceagulant Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%; Score 187; DB 9;
100.0%; Pred. No. 1.1e-18;
iive 0; Mismatches 0;
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US-09-941-314-8
; Sequence 8, Application US/09941314
; Patent No. US20020142396A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           35; Conservative
                                                                                                                                                                                                                                                                                                                                                                        ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
Matches 35; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                   US-09-941-314-8
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39.0%; Score 73; DB 4; Length 139; 41.9%; Pred. No. 0.0027; tive 9; Mismatches 9; Indels
                                                                                                                                                                Length 139
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Pred. No. 0.0027;
9; Mismatches 9; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 15, Application US/08849303
; Patent No. 6680424
; GENERAL INFORMATION:
APPLICANT: Atkinson, Howard J.
APPLICANT: McPherson, Michael J.
APPLICANT: WCPherson, Michael J.
TITLE OP INVENTION: MODIFIED PROTEINASE INHIBITORS
NUMBER OF SEQUENCES: 79
CORRESPONDENCE ADDRESS:
CORRESPONDENCE: Klauber & Jackson
STREET: 411 Hackensack Avenue, 4th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET: 411 naccomments
CITY: Hackensack
STATE: New Jersey
COUNTRY: USA
ZIP: 07601
COMPUTER PLOADABLE FORM:
MEDIUM TYPE: Ploppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/849,303
FILING DATE: 21-MAY-1997
CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: Jackson Esq., David A.
REGISTRATION NUMBER: 26,742
REPRENCE/DOCKET NUMBER: 1321-1-003
TELEFAX: 201-343-1684
TELECOMMUNICATION INFORMATION:
TELEFAX: 201-343-1684
TELESY: 133521
INFORMATION FOR SEQ ID NO: 15:
SEQUENCE GRARACTERISTICS:
LEBOTH: 139 amino acids
TYPE: amino acid
TYPE: amino acid
TYPE: anino acid
                                                                                                                                                                                                                                                                                                             3 SLOWITDOYNKESDDKYHFRIFRVLKVQRQV 33
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                                                                                                                                                                   39.0%;
                                                                                                                                                                Query Match 39.0
Best Local Similarity 41.9
Matches 13; Conservative
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Matches 13; Conservative
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                         IMMEDIATE SOURCE:
LIBRARY: GenBank
                                                      LIBRARY: GenBe
; CLONE: 118195
US-09-314-777-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-849-303-15
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Patent No. 6110686

GENERAL INFORMATION:
APPLICANT: Bandman, Olga
APPLICANT: Goli, Surya K.
ITLE OF INVENTION: NOVEL HUMAN CYSTATIN-LIKE
ITTLE OF INVENTION: PROTEIN
CORRESPONDENCE ADDRESS:
ADDRESSEE: ADDRESSE:
CITY: Palo Alto
STATE: CA
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ZIP: 94304
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM COMPATIBLE
OPERATING SYSTEM: DOS
SOFWARE: FastESC for Windows Version 2.0
CURRENY APPLICATION DATA:
APPLICATION NUMBER: US/09/314,777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3 SLOWITDQYNKESDDKYHFRIFRVLKVQRQV 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         *||: :||: :||: |:||: 47 ALQFAMAEYNRASNDKYSSRVVRVISAKRQL 77
                                                                                                                           ATTORNEY/AGENT INFORMATION:
NAME: Billings, Lucy J.
REGISTATION NUMBER: 36,749
REFERENCE/DOCKET NUMBER: PF-0193 US
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELEFAX: 415-845-055
TELEFAX: 415-845-4166
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 139 amino acids
TYPE: amino acid
TYPE: amino acid
TYPE: amino acids
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NAME: Billings, Lucy J.
REGISTRATION NUMBER: 36,749
REFERENCE/DOCKET NUMBER: PF-0193 US
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-855-0555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE:
CLASSIFICATION:
PRIOR APPLICATION BATA:
APPLICATION NUMBER: 08/791,522
FILING DATE:
Filed Herewith
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                    CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE:
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STRANDEDNESS: si
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US-09-314-777-4
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Gaps
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APPLICANT: University of British Columbia
TITLE OF INVENTION:
FILE REFERENCE: 5806
CURRENT PELLING DATE: 108/9/775,932
CURRENT FILING DATE: 2001-02-02
FRIOR REPLICATION NUMBER: CA99/00717
PRIOR APPLICATION NUMBER: CA99/00717
PRIOR PELICATION NUMBER: 60/095,503
PRIOR FILING DATE: 1999-08-05
NUMBER OF SEQ ID NOS: 32
SOFTWARE PATENTING DATE: 1998-08-05
SOFTWARE PATENTING DATE: 1166
SEQ ID NO 16
SEQ ID NO 16
SEQ ID NO 16
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Patent No. 5935817

GENERAL INFORMATION:

APPLICANT: Bendan, Olga
APPLICANT: Goll, Surya K.

TITLE OF INVENTION: NOVEL HUMAN CYSTATIN-LIKE
TITLE OF INVENTION: PROTEIN

NUMBER OF SEQUENCES: 4

CORRESPONDENCE ADDRESS:

ADDRESSEE: Incyte Pharmaceuticals, Inc.
STREET: 3174 Porter Drive
CITY: Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 73; DB 4;
Pred. No. 0.0022,
9; Mismatches
                                                                                                                                                                                              Query Match 39.6%; Score 74; DB 4; Best Local Similarity 35.5%; Pred. No. 0.002; Matches 11; Conservative 12; Mismatches
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                                                                                                                                                                                                                                                                                                                    24 ALQFAMAEYNRASNDKYSSRVVRVISAKRQL 54.
                                                                                                                                                                                                                                                                                          3 SLOWITDOYNKESDDKYHPRIFRVLKVQRQV 33
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                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 12
US-09-775-932-16
Sequence 16, Application US/09775932
; Partent No. 6534477
                  LENGTH: 141 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: protein
HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 41.9%;
Matches 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM Compatible OPERATING SYSTEM: DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ZIP: 94304.
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM: Gallus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           USA
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                                                                                                                                                        US-08-849-303-24
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION
STREET: 411 Hackensack Avenue, 4th Floor
STREET: 411 Hackensack Avenue, 4th Floor
STREET: 411 Hackensack Avenue, 4th Floor
STATE: New Jersey
COUNTRY: New Jersey
COUNTRY: USA
ZIP: 07601
COMPUTER READABLE FORM:
MEDIUW TYPE: Floppy disk
COMPUTER: IBM PC COMPA: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/849,303
FILING DATE: 21-MAY-1997
CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: Jackson Esq., David A.
REGISTRATION NUMBER: 26,742
REFERENCE/COCKET UMBER: 1321-1-003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Atkinson, Howard J.
APPLICANT: McPherson, Michael J.
APPLICANT: Urwin, Peter B.
TILE OF INVENTION: MODIFIED PROTEINASE INHIBITORS
NUMBER OF SEQUENCES: 79
CORRESPONDENCE ADDRESS:
3 SLQWITDQYNKESDDKYHFRIFRVLKVQRQV 33
                         3 SLQWITDQYNKESDDKYHFRIFRVLKVQRQV 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 6, Application US/09940497
; Sequence 6, Application US/09940497
; Patent No. 6617132
; GENERAL INFORMATION:
    APPLICANT: Ni et al.
    TITLE OF INVENTION: Human Cystatin E
    FILE REFERENCE: PF202PD2
; CURRENT APPLICATION NUMBER: US/09/940, 497
; CURRENT APPLICATION NUMBER: US 09/241,376
; PRIOR APPLICATION NUMBER: US 08/744,138
; PRIOR FILING DATE: 1996-01-05
; PRIOR FILING DATE: 1996-11-05
; PRIOR FILING DATE: 1996-05
; RINGR FILING DATE: 1995-06-05
; NUMBER OF SEQ ID NOS: 13
; SEQ ID NO 6
; SEQ ID NO 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 24, Application US/08849303; Patent No. 6680424; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION:
TELEPHONE: 201-487-5800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ouery Match
Best Local Similarity 35.51
Matches 11, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEX: 133521
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               201-343-1684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; ORGANISM: Homo sapiens
US-09-940-497-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-849-303-24
                                                                                                            RESULT 10
US-09-940-497-6
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Gaps

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Query Match 39.6%; Score 74; DB 4; Length 141; Best Local Similarity 35.5%; Pred. No. 0.002; Matches 11; Conservative 12; Mismatches 8; Indels
                                                                                                                                                          Length 141;
                                                                                                                                                                                                                     8; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/241,376
                                                                                                                                                    Query Match 39.6%; Score 74; DB 3; Best Local Similarity 35.5%; Pred. No. 0.002; Matches 11; Conservative 12; Mismatches
                                                                                                                                                                                                                                                                                                                  :| :: :||| ::|:||: || || 47 ALHFVISEYNKATEDEYYRRLLRVLRAREQ1 77
                                                                                                                                                                                                                                                                                  3 SLOWITDOYNKESDDKYHFRIFRVLKVQRQV 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE: Human Genome Sciences, Inc. STREET: 9410 Key West Avenue CITY: Rockville STATE: Maryland
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Gentz, Reiner L.
APPLICANT: Ni, Jian
APPLICANT: Ni, Jian
APPLICANT: Rosen, Craig A.
APPLICANT: Yu, Guo-Liang
TITLE OF INVENTION: Human Cystatin E
NUMBER OF SEQUENCES: 13
CORRESPONDENCE ADDRESS:
ADDRESSEE: Human Genome Sciences, I)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PILING DATE:
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/744,138
FILING DATE: 05-NOV-1996
CLASSIFICATION DATA:
APPLICATION NUMBER: 08/461,030
FILING DATE: 05-JUN-1995
CLASSIFICATION:
ATTORNEY AGENT INFORMATION:
ATTORNEY AGENT INFORMATION:
NAME: Brookes, A. Anders
REGISTRATION NUMBER: 36,373
REFERENCE/DOCKET NUMBER: PF202P11
TELECOMUNICATION INFORMATION:
TELECOMUNICATION INFORMATION INFORMATIO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGINAL SOURCE:
INDIVIDUAL ISOLATE: Cystatin SN
                                                             Cystatin SN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 6, Application US/09241376
Patent No. 6300477
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH: 141 amino acids
TYPE: amino acid
STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY: linear
MOLECULE TYPE: protein
HYPOTHETICAL: NO
; HYPOTHETICAL: NÔ
; ORIGINAL SOURCE:
; INDIVIDUAL ISOLATE:
US-08-744-138-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-241-376-6
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                                                                       Sequence 8. Application US/09775932

Patent No. 6534477

Patent No. 6534477

GENERAL INFORMATION:

APPLICATION:

PILE REFERENCE: 58069

CURRENT APPLICATION NUMBER: US/09/775,932

CURRENT FILING DATE: 2001-02-02

PRIOR FILING DATE: 1999-08-05

PRIOR PLING DATE: 1999-08-05

PRIOR PLING DATE: 1998-08-05

NUMBER OF SEQ ID NOS: 32

SOFTWARE: PatentIn Ver. 2.0

SEQ ID NO 8

LENGTH: 121
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0.0016;
ches 8; Indels
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MEDIUM TYPE: Floppy disk
MCDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 8
US-08-744-138-6
is Sequence 6, Application US/08744138
is Patent No. 6011012
is GENERAL INFORMATION:
APPLICANT: Gentz, Reiner L.
APPLICANT: Rosen, Craig A.
APPLICANT: Rosen, Craig A.
TITLE OF INVENTION: Human Cystatin E
ITLE OF INVENTION: Human Cystatin E
NUMBER OF SEQUENCES: 13
CORRESPONDENCE ADDRESS:
ADDRESSE: Human Genome Sciences, Inc.
STREET: 9410 Key West Avenue
CITY: Rockville
STARE: Marvica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3 SLOWITDOYNKESDDKYHFRIFRVLKVQRQV 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          39.6%; Score 74; DB 35.5%; Pred. No. 0.00 tive 12; Mismatches
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ATTORNEY/AGENT INFORMATION:
NAME: Brookes, A. Anders
REGISTRATION NUMBER: 36,373
REFERENCE/DOCKET NUMBER: PF202P1
TELEPHONE: 301 309 8504
TELEPHONE: 301 309 8512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH: 141 amino acida
TYPE: amino acid
STRANDEDNESS:
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Best Local Similarity 35.5%
....hos 11; Conservative
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-775-932-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CITY: ROCKVILL STATE: Maryland
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Sequence 3, Application US/09431480 Patent No. 6235708 GENERAL INFORMATION:
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Patent No. 6245529
GENERAL INFORMATION:
Query Match
Best Local Similarity 45.7%;
Matches 16; Conservative 7
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Best Local Similarity 40.0%;
Matches 14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: PRT ORGANISM: Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM: Mus musculus
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| Sequence 4, Application US/09617302
| Patent No. 6245529
| GENERAL INFORMATION: F5529
| APPLICANT: Holloway, James L. APPLICANT: Holloway, James L. APPLICANT: Feldhaus, Andrew
| TILLS OF INVENTION: FESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN T
| FILE REPERBACE: 98-72 C1 | CURRENT APPLICATION NUMBER: US/09/617,302 |
| CURRENT FILING DATE: 1999-11-01 | PRIOR APPLICATION NUMBER: 60/19,217 |
| PRIOR APPLICATION NUMBER: 60/19,217 |
| PRIOR FILING DATE: 1998-11-20 |
| PRIOR FILING DATE: 1999-09-28 |
| NUMBER OF SEQ ID NOS: 22 |
| SOSTWARE: FastSEQ for Windows Version 3.0 |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
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APPLICANT: Holloway, James L.
APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN
FILE REFERENCE: 98-72
CURRENT APPLICATION NUMBER: US/09/431,480
CURRENT APPLICATION NUMBER: 60/109,217
EARLIER PILING DATE: 1998-11-20
EARLIER FILING DATE: 1998-11-20
EARLIER APPLICATION NUMBER: 60/156,382
EARLIER APPLICATION NUMBER: 60/156,382
SAFLIER APPLICATION NUMBER: 00/156,382
SAFLIER APPLICATION NUMBER: 00/156,382
SOFTWARE: FREESQ for Windows Version 3.0
SEQ ID NO 4: 22
                                                                                                                                                                44.4%; Score 83; DB 3; Length 141; 45.5%; Pred. No. 9.4e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 3; Length 142;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 43.9%; Score 82; DB 3; Best Local Similarity 45.7%; Pred. No. 0.00013; Matches 16; Conservative 7; Mismatches 12
                                                                                                                                                                                                                                                         3 SLOWITDOYNKESDDKYHFRIFRUKVOROVTD 35
                                                                                                                                                                                                                                                                                    8; Mismatches
  FastSEQ for Windows Version 3.0
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Patent No. 6235708
GENERAL INFORMATION:
                                                                                                                                                                                   Best Local Similarity 45.5
Matches 15; Conservative
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CORGANISM: Homo sapiens
US-09-431-480-4
                                                                        TYPE: PRT
ORGANISM: Homo sapiens
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ORGANISM: Homo sapiens
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LENGTH: 142
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US-09-431-480-4
                                              LENGTH: 141
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US-09-617-302-4
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  SOFTWARE:
SEQ ID NO 2
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APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN T
FILE REPRENCE: 98-72 C1
CURRENT FILING DATE: 2000-07-17
CURRENT FILING DATE: 2000-07-17
PRIOR PILING DATE: 1999-11-01
PRIOR FILING DATE: 60/109,217
PRIOR FILING DATE: 1999-11-01
PRIOR FILING DATE: 1999-11-02
PRIOR FILING DATE: 1999-11-03
PRIOR FILING DATE: 1999-11-03
PRIOR FILING DATE: 1999-11-03
SOFTWARE: FILING DATE: 1999-09-28
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FASTISEQ for Windows Version 3.0
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APPLICANT: Foldbaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN T
FILE REPERBNCE: 94-72
CURRENT APPLICATION NUMBER: US/09/431,480
CURRENT FILING DATE: 1999-11-01
EARLIER PELING DATE: 1999-11-20
EARLIER APPLICATION NUMBER: 60/109,217
EARLIER APPLICATION NUMBER: 60/109,217
EARLIER PILING DATE: 1999-09-28
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FRASEQ for Windows Version 3.0
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Score 82; DB 3; Length 142;
Pred. No. 0.00013;
7; Mismatches · 12; Indels
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41.2%; Score 77; DB 3; Le
Best Local Similarity 40.0%; Pred. No. 0.00072;
Matches 14; Conservative 9; Mismatches 12;
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Pred. No. 0.00072;
9; Mismatches 12;
                                                                                                                               46 KOCLWFAMQEYNKESEDKYVFLVVKTLQAQLQVTN 80
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                                                                                                   1 KDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTD 35
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US-09-617-302-2

| Sequence 2, Application US/09617302
| Sequence 2, Application US/09617302
| Patent No. 244529
| GENERAL INFORMATION:
| APPLICANT: Holloway, James L. | APPLICANT: Feldhaus, Andrew | TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN T | FILE REFERENCE: 98-72 C1 | FILE REFERENCE: 98-72 C1 | FILE REPERENCE: 1999-11-01 | FRIOR PLICATION NUMBER: 09/431,480 | FRIOR FILING DATE: 1999-11-01 | FRIOR FILING DATE: 1998-11-01 | FRIOR FILING DATE: 1998-11-01 | FRIOR FILING DATE: 1998-11-01 | FRIOR FILING DATE: 1999-11-01 | FRIOR FILING DATE: 1999-11-01 | FRIOR FILING DATE: 1999-109-28 | NUMBER OF SEQ ID NOS: 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 15; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 141
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Sequence 6, B
Sequence 24, B
Sequence 16, B
Sequence 4, A
Sequence 15, B
Sequence 15, B
Sequence 15, B
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Sequence 2, A
Patent No. 543
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Sequence 6,
Sequence 6,
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Sequence 3,
Sequence 3,
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Sequence 4,
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GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
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                                                                                                                                                                                                                                                                         Total number of hits satisfying chosen parameters:
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US-09-617-302-2
US-09-617-302-4
US-09-617-302-3
US-09-617-302-3
US-09-775-932-3
US-09-775-932-16
US-09-940-497-6
US-09-940-497-6
US-09-940-497-6
US-08-74-138-6
US-08-74-138-7
US-08-74-138-7
US-08-74-138-7
US-08-775-932-16
US-08-58-16-58-4
US-08-58-16-58-4
US-08-58-16-58-4
US-08-775-932-24
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-09-775-932-24
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US-09-617-302-6
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                                                                                                                                                                                                                                              389414 segs, 51625971 residues
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                                                                                                                                                                                                                                                                                                                                              Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                        - protein search, using sw model
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Gapop 10.0 , Gapext 0.5
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Maximum DB seq length: 200000000
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Query
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Perfect score:
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                   Sequence 47, Appl
Sequence 3, Appli
Sequence 17, Appl
Sequence 17, Appl
Sequence 19, Appli
Sequence 18, Appli
Sequence 5, Appli
Sequence 5, Appli
Sequence 6, Appli
Sequence 18, Appli
Sequence 2, Appli
                                                                                                                                                                                                                                                                        Sequence 2. Application US/09431480
Fatent No. 6235708
GENERAL INFORMATION:
APPLICANT: Holloway, James L.
APPLICANT: Holloway, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN T
FILE REPERENCE: 98-72
CURRENT APPLICATION NUMBER: US/09/431,480
CURRENT FILING DATE: 1999-11-01
FARLIER FILING DATE: 1999-11-20
FARLIER FILING DATE: 1999-11-20
FARLIER FILING DATE: 1999-12-20
FARLIER FILING DATE: 1999-02-28
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FARLSEQ for Windows Version 3.0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 83; DB 3; Le
Pred. No. 9.4e-05;
8; Mismatches 10;
                                                                                   US-09-775-932-18
US-08-849-303-19
US-09-617-302-5
US-09-617-302-5
US-09-886-319A-46
US-09-886-319A-48
US-08-849-303-18
US-08-849-303-23
US-08-775-932-20
US-09-775-932-20
                                         US-09-976-594-37
US-08-849-303-17
PCT-US95-07135-9
5432264-6
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                                JS-09-940-497-3
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ilarity 45.5%;
Conservative 8
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"Molecular cloning and characterisation of a novel hazel pollen
"Molecular cloning and a luminal binding protein (BiP) ";
"I allergen identified as a luminal binding protein (BiP) ";
Submitted (JUL-2000) to the EMBL/GenBank/DDBJ databases.
"I ENGRELIAN ENGREBLY PLAAYS A ROLE IN FACILITATING THE ASSEMBLY OF MULTIMERIC PROTEIN COMPLEXES INSIDE THE R (BY SIMILARITY).
"I SUBCELLULAR LOCATION: ENDOPLASMIC RETICULUM LUMEN (BY SIMILARITY).
"I STAILEMATTY: BELONGS TO THE HEAT SHOCK PROTEIN 70 FAMILY.
"EMBL; AJ295617; CAC14168.1; -
"RSSP; P19120: 3HSC.
GO: GO:005783; C:endoplasmic reticulum; IEA.
GO: GO:005524; F:ATP binding; IEA.
"InterPro: IPR001086; ER target—S.
"I InterPro: IPR001083; Hsp70.
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 Gaps
                                                                                                                                                                                                                                                                            Corylus avellana (European hazel).
Eukaryota, Viridiplantee, Streptophyta; Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, eudicotyledons, core eudicots; rosids;
euroaids I; Fagales, Betulaceae, Corylus.
NCBI_TaxID=13451;
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Pred. No. 90;
7; Mismatches 7; Indels
14; Indels
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                                                                                                                                                                                        Created)
Last sequence update)
Last annotation update)
                                                                                                                                                       668 AA
                                                   | | : | : | : | : | : | : | 595 LESDEKEKIETAVKDALEWLDDNQSAEKED 624
6; Mismatches
                                6 LSVHEVMAVENYAKDSLQWITDQYNKESDD 35
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ProDom; PD000089; H8p70; 1.
PROSITE; PS00014; ER TARGET; 1.
PROSITE; PS002297; HSP70_1; 1.
PROSITE; PS001297; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
ATP-binding; Endoplasmic_reticulum.
                                                                                                                                                       PRT;
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01-MAR-2001 (TrEMBLrel. 16, Last
01-007-2003 (TrEMBLrel. 25, Last
Putative luminal binding protein.
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36.4%;
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Best Local Similarity 36.4%
Best Local Similarity 36.4%
Conservative
10; Conservative
                                                                                                                                                       PRELIMINARY;
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Search completed: March 18, 2004, 14:21:26 Job time : 22.5714 secs

:|: ||:|:|:| 603 IESAVKDALEWLDDNQSAEKED 624

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Matches

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not other Hsp70 species.";

Bur. J. Biochem. 267:746-754 (2000).

-!- FUNCTION: PROBABLY PLAYS A ROLE IN FACILITATING THE ASSEMBLY OF

MULTIMERIC PROTEIN COMPLEXES INSIDE THE ER (BY SIMILARITY).

-!- SUBCELLULAR LOCATION: ENDOPLASHIC RETICULUM LUMEN (BY SIMILARITY).

-!- SIMILARITY: BELONGS TO THE HEAT SHOCK PROTEIN 70 FAMILY.

EMBL; AJ249329; CAB72128.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids; eurosids I; Cucurbitales; Cucurbitaceae; Cucumis.
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Kindl H., Diefenbach J.;
"The membrane-bound DnaJ protein located at the cytosolic site of
glyoxysomes specifically binds the cytosolic isoform 1 of Hsp70 but
                                                                                                                                                                                                                  Haemophilus ducreyi.
Bacteria; Proteobacteria; Gammaproteobacteria; Pasteurellales;
Pasteurellaceae; Haemophilus.
NCBI_TaxID=730;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
29.1%; Score 55; DB 16; Length 413;
Best Local Similarity 32.4%; Pred. No. 53;
Matches 11; Conservative 10; Mismatches 11; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN=35000HP / ATCC 700724;
Munson R.S. Jr., Ray W.C., Mahairas G., Sabo P., Mungur IJohnson L., Nguyen D., Wang J., Forst C., Hood L.;
The complete genome sequence of Raemophilus ducreyi.";
Submitted (JUN-2003) to the EMBL/GenBank/DDBJ databases.
EMBL, ARD1155; AAP96496.1; -.
COMDLETE PROFICE HORSEN AR AT345 MW; 1A4413BF3AED2471 CRC64;
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                                                                               Last sequence update)
Last annotation update)
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Last annotation update)
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89;
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GO; GO:0005524; F:MP binding; IEA.
InterPro; IPR000886; ER target_S.
InterPro; IPR001023; Hsp70.
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Pred. No.
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01-0CT-2000 (TrEMBLrel. 15, Last seq
01-0CT-2003 (TrEMBLrel. 25, Last ann
                                           Created)
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PROSITE; PS00014; ER TARGET; 1.
PROSITE; PS00297; HSP70_1; 1.
PROSITE; PS00329; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
ATP-binding; Endoplasmic reticulum.
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33.3%;
                               01-OCT-2003 (TrEMBLrel. 25, 01-OCT-2003 (TrEMBLrel. 25, 01-OCT-2003 (TrEMBLrel. 25,
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Cucumis sativus (Cucumber).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
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                                                                                                                                                           HemY protein.
HEMY OR HD1740.
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   ACCOORDING THE SECOND S
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   Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bacteria; Proteobacteria; Alphaproteobacteria; Rhizobiales;
Rhizobiaceae; Rhizobium/Agrobacterium group; Agrobacterium.
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   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABC transporter, membrane spanning protein.
ATU2280 OR AGR C 4143.
Agrobacterium Tumefaciens (strain C58 / ATCC 33970).
                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-JUN-2002 (TrEMBLrel. 21, Last sequence update) 01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
   7;
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GO; GO:0005215; F:transporter activity; IEA.
GO; GO:0006810; P:transport; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ā
                                                                                                                                                                                                                                                                                                                                                     343 AA.
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Mismatches
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PROSITE; PS00402; BPD_TRANSP_INN_MEMBR; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               413
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Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; AE009177; AAL43269.1; -. EMBL; AE008143; AAK88021.1; ALT_INIT.
                                                                                                                                                                                                                                                                                                                                                                                                                         (TrEMBLrel. 21, Created)
                                                                               10 EVMAVENYAKDSLQWITDQYNKE 32
                                                                                                                           |::|| |:|| || ELIAVNNNSKDETQELLDQYAKK 63
                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR000515; BPD_transp.
   2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Science 294:2323-2328(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29.1%;
35.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Science 294:2317-2323(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
   11; Conservative
                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PIR; AG2856; AG2856.
PIR; D97633; D97633.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=176299;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          proteome
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                                                                                                                                                                                                                                                                                                                                                                                     Q8UD47;
                                                                                                                                                                                                                                                                                                                                                     Q8UD47
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RESULT 12
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AC Q810)4
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RESULT 13

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Bacillus anthracis (strain Ames).
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI TaxID=387;
                                                                                                                                                                           Fraser C.M.;
                                                                                                                                                                                                                              BA5610;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN=VF39
                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                             031093;
                                                                                                                                                                                                                                                                                                                                                                                                                                                031093
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                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
Rhabditidae; Peloderinae; Caenorhabditis.
NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                  30.4%; Score 57.5; DB 16; Length 184; 38.5%; Pred. No. 10; tive 6; Mismatches 11; Indels 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Genome sequence of the nematode C.elegans: A platform for
EMBL; AE002178; AAF38049.1; -.
EMBL; AE002547; BAA98780.1; -.
EMBL; AE017129; AAP98525.1; -.
EMBL; B86562; B86562.
PIR; D72061; D72061.
TGR; CP0175; -.
GO; GO:0008207; F:metallopeptidase activity; IEA.
GO; GO:0008207; F:metallopeptidase activity; IEA.
GO; GO:0008208; P:princ ion binding; IEA.
InterPro; IPR006025; Pept M Zn BS.
InterPro; IPR006025; Pept W Zn BS.
PROSITE; PS00142; ZINC_PROFEASE; 1.
Hypothetical protein; CPMOFEASE; 1.
Hypothetical protein; CPMOFEASE; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29.6%; Score 56; DB 5; Length 209; 35.5%; Pred. No. 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (OCT-1996) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Morniep; F1503.6; CE15853.
InterPro; IPR006797; MSF1.
Pfam: PF04707; MSF1.1.
PROSITE; PS55094; PRELI MSF1; 1.
SEQUENCE. 209 AA; 23667 MW; 346AB71D4BBD39C1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-JUN-2003 (TrEMBLrel. 24, Created)
01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
01-JUN-2003 (TrEMBLrel. 25, Last annotation update)
RNA polymerase sigma-70 factor, ECF subfamily.
BA5610.
                                                                                                                                                                                              1 RKKTFLSVHEVMAVENYAKD-----SLQWITDQYNKE 32
                                                                                                                                                                                                         26 RKKTFLSSHRVLARPSPPVDYCPGKIYDLQEIYBELNAQ 64
                                                                                                                                                                                                                                                                                                        Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            :|||||:: | | : ::|: | || EKTFLSIYSQNA--NKGRQGVEWVIDHLKKE 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          175 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 KKTFLSVHEVMAVENYAKDSLQWITDQYNKE 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7; Mismatches
                                                                                                                                                                                                                                                                                             Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=99069613; PubMed=9851916;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           investigating biology.";
Science 282:2012-2018(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; Z81063; CAB02955.1; -. PIR; T20975; T20975.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity 35.5%;
Matches 11; Conservative
                                                                                                                                                                                                                                                                                                        01-AUG-1998 (TrEMBLrel. 07, 01-OCT-2003 (TrEMBLrel. 25,
                                                                                                                                                                                                                                                                                             07,
                                                                                                                                                              Local Similarity 38.5
les 15; Conservative
                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                             01-AUG-1998 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                  Caenorhabditis elegans.
                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
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                                                                                                                                                    Query Match
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                                                                                                                                                                                                                                                                       062173
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Q81JT8
ID Q81JT
DT 01-JU
DT 01-JU
DT 01-OC
DE RNA P
GN BAS61
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MEDLINE=22608414; PubMed=12721629;
Read T.D., Peterson S.N., Tourasse N., Baillie L.W., Paulsen I.T.,
Nelson K.E., Tettelin H., Fouts D.E., Eisen J.A., Gill S.R.,
Holtzapple B.K., Okstad O.A., Helgason E., Riletone J., Wu M.,
Kolonay J.F., Beanan M.J., Dodson R.J., Brinkac L.M., Gwinn M.,
DeBoy R.T., Madpu R., Daugherty S.C., Durkin A.S., Haft D.H.,
Nelson W.C., Peterson J.D., Pop M., Khouri H.M., Radune D.,
Benton J.L., Mahamoud Y., Jiang L., Hance I.R., Weidman J.F.,
Hazen A., Cline R. Nedmond C., Thwaite J.E., Nierman W.C.,
Thomason B., Friedlander A.M., Koehler T.M., Hanna P.C., Kolsto A.-B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "The genome sequence of Bacillus anthracis Ames and comparison to closely related bacteria.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Structural and functional organization of the exopolysaccharide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  biosynthesis genes in Rhizobium leguminosarum bv. viciae VF39.";
Mol. Biol. (Mosk) 32:797-804(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12;
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Bacteria; Proteobacteria; Alphaproteobacteria; Rhizobiales;
Rhizobiaceae; Rhizobium/Agrobacterium group; Rhizobium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 175;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sadykov M.R., Ivashina T.V., Kanapin A.A., Shlyapnikov M.G.
Ksenzenko V.N.;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7; Indels
Bacteria; Firmicutes; Bacillales; Bacillaceae; Bacillus.
NCBI_TaxID=198094;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  175 AA; 21395 MW; 58583126E6657D80 CRC64;
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InterPro; IPR001173; Glycotrans 2.
Pfam; PF00535; Glycos transf 2.1.
SEQUENCE 327 AA; 36361 WW; E3AE2231DCF05A92 CRC64;
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01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
01-WAR-2003 (TrEMBLrel. 23, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3 KTFLSVHEVMAVENYAKDSLQWIT-----DQYNKE 32
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 29.1%; Score 55; DB 16; Best Local Similarity 39.5%; Pred. No. 20; Matches 15; Conservative 4; Mismatches 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  327 AA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR009043; RNA pol sigma.
InterPro; IPR007627; Sigma70_r2.
InterPro; IPR007630; Sigma70_r4.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nature 423:81-86(2003).
EMBL; AE017041; AAP29248.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam; PF04542; sigma70_r2; 1
Pfam; PF04545; sigma70_r4; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
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SEQUENCE FROM N.A.
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Hall N., Pain A., Berriman M., Churcher C., Harris B., Harris D.,
Hall N., Pain A., Berriman M., Churcher C., Harris B., Harris D.,
Hall N., Pain A., Berriman M., Churcher C., Harris B., Harris D.,
Hangan C., Cherevach I., Chillingworth C.,
Christodhuo Z., Clark L., Clark R., Corton C.,
Crohin A., Davies R., Davis P., Dear P., Dearden F., Doggett J.,
Harper D., Hauser H., Hornsby T., Holliam R., Hannin N., Hance Z.,
Humphray S., Jagels K., James K.D., Johnson D., Kerhornou A.,
Humphray S., Jagels K., James K.D., Johnson D., Kerhornou A.,
Mights A., Konfortov B., Kyes S., Larke N., Lawson D., Lennard N.,
Line A., Maddison M., Mclean J., Mooney P., Moule S., Murphy L.,
Oliver K., Ormond D., Price C., Quail M.A., Rabbinowitsch B.,
Seeger K., Sharsp S., Smith R., Squares R., Squares S., Stevens K.,
Alaylor K., Tivey A., Unwin L., Whitehead S., Woodward J.,
Sulston J.E., Craig A., Newbold C., Barrell B.G;
Nather A. 10.677-831(2002)
                                                                                                                                                       Gaps
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01-MAR-2003 (TrEMBLrel. 23, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
MAL13P1.310.
Plasmodium falciparum (isolate 3D7).
Rukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium.
[1]
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NCBL_TaxID=36329;
                                                                                                         Score 58; DB 16; Length 240;
Pred. No. 12;
8; Mismatches 11; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30.7%; Score 58; DB 5; Length 851; 29.0%; Pred. No. 47;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       851 AA; 105268 MW; 76ABED8CFCBE9001 CRC64;
                                                                 240 AA; 28117 MW; 1434A0B458CC54B0 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                       Created)
Last sequence update)
Last annotation update)
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                                                                                                                                                                                              3 KTFLSVHEVMAVENYAKDSLQWITDQYNK 31
SMART; SM00421; HTH LUXR; 1.
PROSITE; PS00622; HTH LUXR_FAMILY; 1.
                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Plasmodium falciparum (isolate 3D7)
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hypothetical protein (Fragment).
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                                                                                                         th 30.7%;
[Similarity 34.5%;
10; Conservative
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                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
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NON TER 851 89
                                                                                                                                 Best Local Similarity
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01-MAR-2003
01-MAR-2003
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SEQUENCE
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                                                Complete
                                                                 SEQUENCE
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SEQUENCE FROM N.A.

Harris B., Lennard N., Clark L., Line A., Barron A., Corton C.,

Harris B., Lennard N., Hall N., Atkin R., Chillingworth C., Doggett J.,

Ormond D., Sanders M., Hayes R., Hall S., Quail M., Barrell B.;

Submitted (SEP-2002) to the EMBL/GenBank/DDBJ databases.

EMBL, AL844509; CAD55744.1; -.

EMBL, AL844509; CaD55744.1; -.

GO; GO:0006508; P:proteollular; IEA.

GO; GO:0006508; P:proteolygis and peptidolysis; IEA.

InterPro; IPR001300; Peptidase_C2.

InterPro; IPR001300; Peptidase_C2: SubmRT; SM00230; CysPep; 1.

SEQUENCE 2030 AA; 240335 MW; 45DFBAD37159B308 CRC64;
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"The genome sequence of Chlamydia pneumoniae TW183 and comparison with other Chlamydia strains based on whole genome sequence analysis.";
Submitted (MAY-2002) to the EMBL/GenBank/DDBJ databases.
EMBL; AE001642; AAD18714.1;
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Read T.D., Brunham R.C., Shen C., Gill S.R., Heidelberg J.F.,
White O., Hickey E.K., Peterson J., Utterback T., Berry K., Bass S.,
Linher K., Weidman J., Khouri H., Craven B., Bowman C., Dodson R.,
Gwinn M., Nelson W., DeBoy R., Kolonay J., McClarty G., Salzberg S.L.,
Eisen J., Fraser C.M.;
"Genome sequences of Chlamydia trachomatis MoPn and Chlamydia
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Kalman S., Mitchell W., Marathe R., Lammel C., Fan J., Hyman R.W., Oliniger L., Grimwood J., Davis R.W., Stephens R.S.; "Comparative genomes of Chlamydia pneumoniae and C. trachomatis."; Nat. Genet. 21:385-389(1999).
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01-OCT-2003 (TERMELTEI. 25, Last annotation update)
Hypothetical protein CPD6574.
CPN0574 OR CPJ0574 OR CPD0575.
Chlamydia pneumoniae (Chlamydophila pneumoniae).
Bacteria, Chlamydiae; Chlamydiales; Chlamydophila.
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Best Local Similarity 29.7%; Pred. No. 1.2e+02;
Matches 11; Conservative 11; Mismatches 11; Indels
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Nucleic Acids Res. 28:2311-2314(2000).
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MEDLINE=20330349; PubMed=10871362;
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Gaps

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SOCCOS SERVICE SOCCOS S

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Takenaka A., Tajima K., Mitsumori M., Kajikawa H.;

"Characterization of fibrolytic enzyme colona from two species of rumen ciliates, Epidinium caudatum and Polyplastron multivesiculatum.";

Submitted (PEB-2003) to the EMBL/GenBank/DDBJ databases.

BEBL, ABIO4619; BAC57896.1;

GO; GO:0004553; F:hydrolase activity, hydrolyzing O-glycosyl . .; IEA.

GO; GO:0005975; P:carbohydrate metabolism; IEA.

PICAPPO, IRROLASY; Glyco hydro.5.

PEROSITE; PS00659; GLYCOSYL_HYDROL_F5; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN=015:N:T / RIMD 0509952;
MEDLINE=21156231; PubMed=11258796;
MEDLINE=21156231; PubMed=11258796;
MEDLINE=21156231; PubMed=11258796;
Han C.-G., Ohtsubo E., Nakayama K., Murata T., Tanaka M., Tobe T.,
Iida T., Takami H., Honda T., Sasakawa C., Ogasawara N., Yasunaga T.,
Kuhara S., Shiba T., Hattori M., Shinagawa H.,
"Complete genome sequence of enterchemorrhagic Escherichia coli
"Complete genome sequence of enterchemorrhagic Scherichia coli
"Complete genome sequence of enterchemorrhagic Scherichia coli
"Complete genome sequence of enterchemorrhagic Scherichia Coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=21074935, PubMed=11206551,
Perna N.T., Plunkett G. III, Burland V., Mau B., Glasner J.D.,
Perna N.T., Plunkett G. III, Burland V., Mau B., Glasner J.D.,
Poste D.J., Mayhew G.F., Evans P.S., Gregor J., Kirkpatrick H.A.,
Postai G., Hackett J., Klink S., Boutin A., Shao Y., Miller L.,
Grotbeck B.J., Davis N.W., Lim A., Dimalanta B.T., Potamousis K.,
Apodaca J., Anantharaman T.S., Lin J., Yen G., Schwartz D.C.,
"Belch R.A., Blattner F.R.;
"Genome sequence of enterchaemorrhagic Escherichia coli O157:H7.";
Nature 409:529-533(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GO; GO:0005622; C:intracellular; IEA.
GO; GO:0003700; F:transcription factor activity; IEA.
GO; GO:000375; P:regulation of transcription, DNA-dependent; IEA.
InterPro; IPR006143; Autoind bind.
InterPro; IPR00792; HTH LuxR.
Pfam; PF00196; GerB; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .a coli 0157:H7.
Proteobacteria; Gammaproteobacteria; Enterobacteriales;
                                                                                                                                                                                                                                                                                                                                  5; Length 844;
                                                                                                                                                                                                                                                                                                                                Query Match 34.4%; Score 65; DB 5; Length 844
Best Local Similarity 47.4%; Pred. No. 5.3;
Matches 18; Conservative 5; Mismatches 11; Indels
                                                                                                                                                                                                                                                                                      844 AA; 98252 MW; 3289CF22F81B91BA CRC64;
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01-MAR-2002 (TrEMBLrel. 20, Last sequence update)
01-UDN-2003 (TrEMBLrel. 24, Last annotation update)
Transcriptional regulator of ftsQAZ gene cluster.
SDIA OR EC3004 OR ECSA654.
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STRAIN=0157:H7 / EDL933 / ATCC 700927;
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EMBL; AE005414; AAG56931.1; -.
EMBL; AP002559; BAB36077.1; -.
PIR; F90966; F90966.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRINTS; PR00038; HTHLUXR.
ProDom; PD000307; HTH_LUXR; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
[1]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=83334;
                                                                                                                                                                                                                                                               NON TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QBXBD0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 5
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Merazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                        SEQUENCE FROM N.A.

Hamil K.G., Liu Q., Zhang Y.-L., French F.S., Hall S.H.;

"SCIJ3: A novel epididymal specific member of the cystatin family.";

"Sclimitted (JAN-2010) to the EMBL/GenBank/DDBJ databases.

EMBL, AF335480; AAL71991.1;

GO; GO:0004869; F:cysteine protease inhibitor activity; IEA.

InterPro: IPR000010; Cystatin.
                                     Eukaro official disconsistanti (Inordata; Craniata; Vertebrata; Buteleostomi; Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cellulase celà (Fragment).
CELA.
Polyplastron multivesiculatum.
Bukaryota; Alveolata; Ciliophora; Litostomatea; Trichostomatia;
Entodiniomorphida; Ophryoscolecidae; Polyplastron.
NCBI_TaxID=47894;
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STRAIN-Sprague-Dawley;
Hanil K.G., Hall S.H.;
Hanil K.G., Hall S.H.;
Hanil K.G., Hall S.H.;
Hanil K.G., Hall S.H.;
EMBL; AF501290; AAM21709.1; -.
GO; GO: 0004869; F:cysteine protease inhibitor activity; IEA.
Interpro; IPRO00010: Cystatin.
Fram; PP00031; Cystatin; 1.
SWART; SM00043; CY; 1.
SEQUENCE 139 AA; 16686 MW; EIE36DB786B4D08C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        52.9%; Score 100; DB 11; Length 139; 45.7%; Pred. No. 1.5e-05; ive 14; Mismatches 5; Indels
                                                                                                                                                                                                                                                                                                                                                                            Length 138;
                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                  Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
SEQUENCE 138 AA; 16506 MW; E49440ACA3585C64 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Last sequence update)
Last annotation update)
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Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                          100.0%; Score 189; DB 4;
100.0%; Pred. No. 1.9e-17;
iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              27 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDD 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27 KRKTFIRVEEVNALESSVKETLEYVTEEYNKKSED 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT; 139 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Created)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-OCT-2002 (TrEMBLrel. 22, 01-OCT-2002 (TrEMBLrel. 22, 01-JUN-2003 (TrEMBLrel. 24,
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                                                                                                                                                                                                                                                                                                                                                                                                                           36; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rattus norvegicus (Rat).
                       sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
                                                                                     NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cystatin 11.
                                                                                                                                                                                                                                                                                                                                                                                 Query Match
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Q86S89;
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RESULT 3
QBK5A3
QBK5A3
AC QBK5
AC QBK5
DD 01-0
DT 01-0
DD C1-0

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Matches

RESULT 4

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GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
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OM protein - protein search, using sw model

March 18, 2004, 14:05:55; Search time 21.5714 Seconds (without alignments) 526.560 Million cell updates/sec Run on:

US-09-941-314-6 189 1 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 36

Title: Perfect score: Sequence:

Scoring table:

BLOSUM62 Gapop 10.0 , Gapext 0.5

1017041 Total number of hits satisfying chosen parameters:

1017041 seqs, 315518202 residues

Searched:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database

SPTREWBL 25:*

1: 8p_archea:*
2: 8p_bacteria:*
3: 8p_fungi:*
4: 8p_human:*
5: 8p_maman:*
6: 8p_maman:*
7: 8p_mhc:*
8: 8p_organelle:*
9: 8p_phage:*
10: 8p_phage:*
11: 8p_rodent:*
2: 8p_virus:*
3: 8p_virus:*
3: 8p_virus:*
1: 8p_rodent:*
3: 8p_virus:*
3: 8p

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Description	Q8wxu5 homo sapien	Q8wxu6 homo sapien	Q8k5a3 rattus norv	Q86889 polyplastro	Q8xbd0 escherichia	Q8i225 plasmodium	Q8id83 plasmodium	Q9z7x9 chlamydia p	062173 caenorhabdi	Q81jt8 bacillus an	O31093 rhizobium l	Q8ud47 agrobacteri	Q7vkx1 haemophilus	Q9m4e8 cucumis sat	Q9fsy7 corylus ave	Q8zz45 pyrobaculum
ID	Q8WXU5	90хм80	Q8K5A3	086889	Q8XBD0					Q81JT8	031093	. Q8UD47	Q7VKX1	Q9M4E8	Q9FSY7	082245
08	4	4	11	S	16	'n	'n	16	Ŋ	16	N	16	16	5	70	17
% Query Match Length DB ID	103	138	139	844	240	851	2030	184	209	175	327	343	413	665	668	273
% Query Match	100.0	100.0	52.9	34.4	30.7	30.7	30.7	30.4	29.6	29.1	29.1	29.1	29.1	29.1	29.1	28.8
Score	189	189	100	65	58	58	28	57.5	26	52	52	55	55	55	55	54.5
Result No.	п	7	٣	4	S	9	7	ω	σ	10	11	12	13	14	15	16

097225 plasmodlum (081499 bacillus ce (088494 bacillus ce (0886) bacillus cart (08815 bacteroides (051819 caenorhabdi (08177) caenorhabdi (081797) caenorhabdi (081797) caenorhabdi (081781 shigella fl (08178	Q9eaa5 human immun Q8x7i4 escherichia Q9pi81 campylobact Q26602 methanobact Q24842 entamoeba h Q97kn6 clostridium Q05435 saccharomyc Q8cn34 staphylococ Q9uxp0 methanolobu
5 097225 16 081409 10 095BN2 10 095BN2 16 08A815 5 081819 5 081819 16 08787 16 08787 5 086KT1 2 086KT1 2 086KT1 2 086KT1 2 086KT1 10 0959F0 9 0859F0 10 0950X4 11 0950X4 5 00914	15 Q9EAA5 16 Q9X714 16 Q9D481 17 O26602 5 Q24842 16 Q97KN6 3 Q05435 16 Q8CN34
2226 176 176 189 524 520 500 500 500 500 500 300 351 351 457 467 467 467 467 467 467 467 467 467 46	122 318 465 567 656 190 238 326
222777555666666666666666666666666666666	7,7,7,7,7,7,7,7,7,7,7,7,7,7,7,7,7,7,7,
4. 2. 2. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4.	51.5 51.5 51.5 51.5 51.5 51.5 51.5 51.5
111 118 122 122 133 133 133 133 133 133 133 133	W W W 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4

ALIGNMENTS

Gaps . 0 Query Match
Best Local Similarity 100.0%; Pred. No. 1.4e-17;
Matches 36; Conservative 0; Mismatches 0; Indels (

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01-MAR-2002 (TrEMBLrel. 20, Created) 01-MAR-2002 (TrEMBLrel. 20, Last sequence update) 01-JUN-2003 (TrEMBLrel. 24, Last annotation update) 138 AA. PRT; PRELIMINARY; QBWXU6 RESULT 2 Q8WXU6 4444

, Seurinck J., Botterman is encoded by a multigene

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                                                                                                                                                                                        Denecke J., Goldman M.H., Demolder J., Seurinck J., Botterman J.; Plant Cell 3:1251-1211(1991).
--- FUNCTION: Probably plays a role in facilitating the assembly of multimeric protein complexes inside the ER.
                                                                                                                                                                                                                                                                                                 -1- SUBCELLULAR LOCATION: Endoplasmic reticulum lumen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROSITE; PS00329; HPP70-2; PARTIAL.
PROSITE; PS01036; HSP70-3; PARTIAL.
PROSITE; PS01014; ER TARGET; 1.
ATP-binding; Endoplagmic reticulum; Multigene family.
NON TER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            222 LESDEKEKIETATKEALEWLDDNQSAEKED 251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6 LSVHEVMAVENYAKDSLQWITDQYNKESDD 35
                          Denecke J., Goldman M.H., Demolder J. "The tobacco luminal binding protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ProDom; PD000089; HSp70; 1.
PROSITE; PS00297; HSP70_1; PARTIAL
  MEDLINE=92361242; PubMed=1822990;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HSSP; P08109; 1CKR.
InterPro; IPR000886; ER target S.
InterPro; IPR001023; Hsp70.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam; PF00012; HSP70; 1.
PRINTS; PR00301; HEATSHOCK70.
                                                                                                            Plant Cell 3:1025-1035(1991)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; X60062; CAA42664.1; -.
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Best Local Similarity 30.0
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S21881; S21881.
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  SO TITE WAR THE SECOND OF THE 
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                       Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids; lamiids; Solanales; Solanaceae; Nicotiana.
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                                                                                                                                                                                                                                                                                                                                                                                      Denecke J., Goldman M.H., Demolder J., Seurinck J., Botterman J., Plant Cell 3:1251-1251(1991).
-!- FUNCTION: Probably plays a role in facilitating the assembly of multimeric protein complexes inside the ER.
-!- SUBCELLULAR LOCATION: Endoplasmic reticulum lumen.
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N-LINKED (GLCNAC. . .) (POTENTIAL).
PREVENT SECRETION FROM ER (POTENTIAL).
6E7A4F5107C6E2D5 CRC64;
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                                                                                                                                                                                           MEDLINE-92361242; PubMed-1822990;
Denecke J., Goldman M.H., Demolder J., Seurinck J., Botterman e
"The tobacco luminal binding protein is encoded by a multigene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 51; DB 1; Length 292;
Pred. No. 18;
7; Mismatches 14; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRINTS; PR00301; HEATSHCK70.
ProDom; PD000089; HSp70; 1.
PROSITE; PS00129; HSP70 1; PARTIAL.
PROSITE; PS01036; HSP70 2; PARTIAL.
PROSITE; PS01036; HSP70 3; PARTIAL.
ATP-binding; Endoplasmic reticulum; Multigene family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 219 LESDEKEKIETATKEALEWLDDNOSAEKED 248
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  Nicotiana tabacum (Common tobacco)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HSSP; P08109; 1CKR.
InterPro; IPR000886; ER target_S.
InterPro; IPR001023; Hsp70.
Pfam; PF00012; HSP70; 1.
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Query Match

Best Local Similarity 30.v.,

Best Local 9; Conservative
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                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                  NCBI_TaxID=4097;
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                                                                                                                                                                                                                                                                                   family.
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Search completed: March 18, 2004, 14:16:10 Job time : 5.28571 secs

Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Spermatophyta, Magnoliophyta, eudicotyledons, core eudicots, asterids, lamiids, Solanales, Solanaceae, Nicotiana.

SEQUENCE FROM N.A

Nicotiana tabacum (Common tobacco)

01-FEB-1995 (Rel. 31, Last sequence update) 16-OCT-2001 (Rel. 40, Last annotation update) Luminal binding protein 8 (BiP 8) (78 kba glucose-regulated protein homolog 8) (GRP 78-8) (Fragment).

01-FEB-1995 (Rel. 31, Created)

293 AA.

STANDARD;

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BIPB

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Q03686;

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Gaps

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27.0%; Score 51; DB 1; Length 293; 30.0%; Pred. No. 18; ive 7; Mismatches 14; Indels

N-LINKED (GLCNAC. . .) (POTENTIAL).
PREVENT SECRETION FROM ER (POTENTIAL).
44939595845650E6 CRC64;

32342 MW;

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27.0%; Scor.
30.0%; Pred. No. 10,
7; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ProDom; P0000089; H8P70; 1.
PROSITE; PS00297; HSP70_1; PARTIAL.
PROSITE; PS00329; HSP70_2; PARTIAL.
PROSITE; PS01036; HSP70_3; PARTIAL.
PROSITE; PS01014; ER TARGET; 1.
                                                                                                                      Nicotiana tabacum (Common tobacco)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HSSP, P08109; 1CKR.
InterPro; IPR000886; ER_target_S.
InterPro; IPR001023; Hsp70.
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PRINTS; PR00301; HEATSHOCK70.
                                                                                                                                                                                                                                                                                                                 Plant Cell 3:1025-1035(1991).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 30.00
Best Local 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                       NCBI_TaxID=4097;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOBAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CARBOHYD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its most by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch)
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                                                                                                                                                                                                                                                                                         Bukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Spermatophyta, Magnoliophyta, eudicotyledons, core eudicots, asterids, lamiids, Solanales, Solanaceae, Nicotiana.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                   01-FEB-1995 (Rel. 31, Created)
01-FEB-1995 (Rel. 31, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Luminal binding protein 3 (BiP 3) (78 kDa glucose-regulated protein
homolog 3) (GRP 78-3) (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Denecke J., Goldman M.H., Demolder J., Seurinck J., Botterman J., Plant Cell 3:1251-1251(1991).
-!- FUNCTION: Probably plays a role in facilitating the assembly of multimeric protein complexes inside the ER.
-!- SUBCELLULAR LOCATION: Endoplasmic reticulum lumen.
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120 120 N-LINKED (GLCNAC. . .) (POTENTIAL).
165 168 PREVENT SECRETION FROM ER (POTENTIAL)
168 AA; 18838 MW; D0089CF2219C624E CRC64;
                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
MEDLINE=92361242; PubMed=1822990;
Denecke J., Goldman M.H., Demolder J., Seurinck J., Botterman J.;
"The tobacco luminal binding protein is encoded by a multigene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
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Pred. No. 9.6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Probom; PD000089; HSp70; 1.
PROSITE; PS00297; HSP70_1; PARTIAL.
PROSITE; PS00329; HSP70_2; PARTIAL.
PROSITE; PS01036; HSP70_3; PARTIAL.
PROSITE; PS00014; ER TARGET; 1.
ATP-binding; Endoplasmic reticulum; Multigene family.
              RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDD 35
                                168 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  290 AA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                            Nicotiana tabacum (Common tobacco)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR000886; ER target_S.
InterPro; IPR001023; Hsp70.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Plant Cell 3:1025-1035(1991)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; X60061; CAA42663.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pfam; PF00012; HSP70; 1.
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                                                                                                                                    STANDARD;
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Best Local Similarity
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01-FEB-1995 (
16-OCT-2001 (
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BIP1_TOBAC
ID BIP1_TOBAC
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CARBOHYD
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003683;
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                                                                                                                                                                                                                                                            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids;
lamiids; Solanales; Solanaceae; Nicotiana.
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01-FEB-1995 (Rel. 31, Created)
01-FEB-1995 (Rel. 31, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Luminal binding protein 1 (BiP 1) (78 kDa glucose-regulated protein
homolog 1) (GRP 78-1) (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-FEB-1995 (Rel. 31, Created)
01-FEB-1995 (Rel. 31, Last sequence update)
16-OCT-2001 (Rel. 40, Last annocation update)
Luminal binding protein 2 (BiP 2) (78 kDa glucose-regulated protein
homolog 2) (GRP 78-2) (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241 241 N-LINKED (GLCNAC, . .) (POTENTIAL).
287 290 PREVENT SECRETION FROM ER (POTENTIAL)
290 AA; 32031 MW; E80F65136E64BF89 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Denecke J., Goldman M.H., Demolder J., Seurinck J., Botterman J.; Plant Cell 3:1251-1251(1991).
-!-FUNCTION: Probably plays a role in facilitating the assembly of multimeric protein complexes inside the ER.
-!- SUBCELLULAR LOCATION: Endoplasmic reticulum lumen.
-!- SIMILARITY: Belongs to the heat shock protein 70 family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-92361242; PubMed=1822990;
Denecke J., Goldman M.H., Demolder J., Seurinck J., Botterman of The tobacco luminal binding protein is encoded by a multigene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
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Pred. No. 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATP-binding; Endoplasmic reticulum; Multigene family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 14
BIP2 TOBAC
AC 003682;
DT 01-FEB-15
DT 16-CT-27
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J. Bacteriol. 171:3948-3960(1989).
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HSSP; Q42843; 1B29.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               418 AA;
                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               StyGene;
      This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@leb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1;
                                                                                                                                                                                                                          -!- CATALYTIC ACTIVITY: 5,10-methylenetetrahydrofolate + dUMP = dihydrofolate + dTMP.
-!- PATHWAY: Essential step for de novo glycine and purine synthesis, DNA precursor synthesis, and for the conversion of dUMP to dTMP.
-!- SIMILARITY: In the N-terminal section; belongs to the dihydrofolate reductase family.
-!- SIMILARITY: In the C-terminal section; belongs to the thymidylate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Multifunctional enzyme; Oxidoreductase; Transferase; NADP;
Muchyltransferase; Nucleotide biosynthesis; One-carbon metabolism.
NON TER 1 1 > 182 DIHYDROFOLATE REDUCTASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Elliott T.; "Cloning, genetic characterization, and nucleotide sequence of the hemA-prfA operon of Salmonella typhimurium.";
                                                                                                                                            mutations and pyrimethamine resistance.";
Mol. Biochem. Parasitol. 65:361-363(1994).
-!- CATALYTIC ACTIVITY: 5,6,7,8-tetrahydrofolate + NADP(+) = 7,8-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7
                                                              SEQUENCE FROM N.A.
MEDILNE-95059225; PubMed=7969277;
Cheng Q., Saul A.;
"The dihydrofolate reductase domain of rodent malarias: point
      Eukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27.5%; Score 52; DB 1; Length 182; 38.2%; Pred. No. 7.7; tive 7; Mismatches 12; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         182 182
182 AA; 20924 MW; 33CCD27441763198 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROSITE; PS00075; DHFR; 1.
PROSITE; PS00091; THYMIDYLATE_SYNTHASE; FALSE_NEG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KHFVSVTSYVNENNYIR--LKWKRDKYIKENNVK 73
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR001796; DHFR.
InterPro; IPR000398; Thymidylat_synth.
Pfam; PF00186; DiHfolate_red; 1.
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MEDLINE=89291746; PubMed=2544564;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Enterobacteriaceae; Salmonella
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; L28121; AAA29582.1; -.
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                                                                                                                                                                                                           dihydrofolate + NADPH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRINTS; PR00070; DHFR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=602, 601;
                                                                                                                                                                                                                                                                                                                                                                               synthase family.
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                       NCBI_TaxID=5860;
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SEQUENCE
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SALTY
AC P13581
DT 01-JAN
DT 12-FREN
DT 15-MAR
DG GN 15-MAR
DG GN HENA O
CS SALMON
OS SALMON
OC BACTER
OC BACTER
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Parkhill J., Dougan G., James K.D., Thomson N.R., Pickard D., Wain J., Churcher C., Mungall K.L., Bentley S.D., Holden M.T.G., Sebaihia M., Baker S., Basham D., Brooks K., Chillingworth T., Connerton P., Cronin A., Davis P., Davies R.M., Dowd L., White N., Farrar J., Feltwell T., Hamlin N., Haque A., Hien T.T., Holroyd S., Jaqels K., Krogh A., Larsen T.S., Leather S., Moule S., O'Gaora P., Parry C., Quail M.A., Rutherford K., Simmonds M., Skelton J., Stevens K., Whitehead S., Barrell B.G.; Simmonds M., Skelton J., Stevens K., "Complete genome sequence of a multiple drug resistant Salmonella enterica servar Typhi CT18.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SPECTES=S. Lyphi; STRAIN=Ty2 / ATCC 700931;
MEDLINE=22531367; PubMed=12644504;
Deng W., Liou S.-R., Plunkett G. III, Mayhew G.F., Rose D.J.,
Burland V., Kodoyianni V., Schwartz D.C., Blattner F.R.;
"Comparative genomics of Salmonella enterica serovar Typhi strains Ty2
SPECIES=S.typhimurium; STRAIN=LT2 / SGSC1412 / ATCC 700720;
MEDLINE=21534948; PubMed=11677609;
McClelland M., Sanderson K.E., Spieth J., Clifton S.W., Latreille P., Courtney L., Porwollik S., Ali J., Dante M., Du F., Hou S., Layman D., Leonard S., Nguyen C., Scott K., Holmes A., Grewal N., Mulvaney E., Ryan E., Sun H., Florea L., Miller W., Stoneking T., Nhan M., Waterston R., Wilson R.K.;
                                                                                                                                                                                                                                                                                     "Complete genome sequence of Salmonella enterica serovar Typhimurium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
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-!- CATALYTIC ACTIVITY: Glutemmyl-ERNA(Glu) + NADPH = glutemate-1-semialdehyde + NADP + + ERNA(Glu)
-!- PATHWAY: Porphyrin blosynthesis by the C5 pathway; first step.
-!- SIMILARITY: Belongs to the glutemyl-tRNA reductase family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              proteome.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   46105 MW; 92961964C36AD3F4 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HAMAP; MF 00087; -; 1.
InterPro; IPR000343; GlutR.
Pfam; PF00745; GlutR dimer; 1.
Pfam; PF05201; GlutR_N; 1.
Pfam; PF05200; GlutR_NAD bind; 1.
TIGRFAMS; TIGR01035; hemĀ; 1.
PROSITE; PS00747; GLUTR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SPECIES-S.typhi; STRAIN-CT18;
MEDLINE-21534947; PubMed-11677608;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; AE008779; AAL20692.1; -. EMBL; AL627271; CAD02132.1; -. EMBL; AE016837; AA068762.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; J04243; AAA88610.1; -.
                                                                                                                                                                                                                                                                                                                                                                    Nature 413:852-856(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 27.2
Best Local Similarity 31.4
Matches 11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SG10149; hemA.
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74 KNFLAIDPVLNPENFSQCHLMWNDDLFSE 102

3 KTFLSVHEVMAVENYAKDSLQWITDQYNK 31

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROSITE; PS00622; HTH LUXR PAMILY; 1.
Transcription regulation; Activator; DNA-binding; Trans-acting factor;
                                                                                                                                                                                                                                                                                                                                                                                                                                              of Escherichia coli.";
EMBO J. 10:3363-3372(1991).
-!- FUNCTION: ACTIVATES CELL DIVISION BY SPECIFICALLY INCREASING
-TRANSCRIPTION FROM ONE OF THE TWO PROMOTERS THAT LIE IMMEDIATELY
UPSTREAM OF THE FYSOAZ GENE CLUSTER.
-!- SIMILARITY: BELONGS TO THE LUXR/UHPA FAMILY OF TRANSCRIPTIONAL
                                                                                           STRAIN=KI2 / MGI655;
MEDLINE=97426617; PubMed=9278503;
Blattner F. R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V., Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F., Mayer J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J.,
                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=92007787; PubMed=1915297; Wang X., de Boer P.A.J., Rothfield L.I.; And A factor that positively regulates cell division by activating transcription of the major cluster of essential cell division genes
          MEDINE-86176730; PubMed-3515318;
Sharma S., Stark T.F., Beattie W.G., Moses R.E.;
"Multiple control elements for the uvrC gene unit of Escherichia
                                                                                                                                                                                                                                                   TOYLMLPNR -> HSVFNAAQTG (IN REF. A -> R (IN REF. 1).
C04CCC50C06135C4 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 28.0%; Score 53; DB 1; Length 240; Best Local Similarity 31.0%; Pred. No. 7.7; Matches 9; Conservative 9; Mismatches 11; Indels
                                                                                                                                                                         "The complete genome sequence of Escherichia coli K-12.";
Science 277:1453-1474(1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           H-T-H MOTIF (BY SIMILARITY)
TQYLMLPNR -> HSVFNAAOTG (IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           or send an email to license@isb-sib.ch).
                                                             Nucleic Acids Res. 14:2301-2318(1986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; AE000284; AAC74983.1; -.
EMBL; D90832.2; BAA15736.1; -.
PIR; A64955; QQECU1.
ECGENE; EG10935; sdiA.
InterPro; IPR005143; Autoind bind.
InterPro; IPR00792; HTH LuxR.
Pfam; PP03472; Autoind bind; 1.
Pfam; PP00196; GerB; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cell division; Complete proteome.
                                                                                                                                                                                                                                         MEDLINE=97251358; PubMed=9097040;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ProDom; PD000307; HTH LUXR; 1.
SMART; SM00421; HTH LÜXR; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28117 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; X03691; CAA27327.1; -.
                                                                                                                                                                                                                                                                                                                                                        DNA Res. 3:379-392(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        140 1
240 AA;
SEQUENCE FROM N.A.
                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REGULATORS.
                                                                                                                                                                                                                                STRAIN=K12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA BIND
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                   FUNCTION
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01-NOV-1995 (Rel. 32, Last sequence update)
15-JUL-1999 (Rel. 38, Last annotation update)
Bifunctional dihydrofolate reductase-thymidylate synthase (DHFR-TS)
[Includes: Dihydrofolate reductase (EC 1.5.1.3); Thymidylate synthase (EC 2.1.1.45)] (Fragment).
                                                                                                                                                                                                                                                                                                                                                                             Horinouchi S., Weisblum B.;

"Nucleotide sequence and functional map of pE194, a plasmid that
"Nucleotide sequence and functional map of pE194, a plasmid that
specifies inducible resistance to macrolide, lincosamide, and
streptogramin type B antibodies.";

J. Bacteriol. 150:804-814(1982).

-! FUNCTION: THE INTERACTION OF THE RSA SITE AND THE PRE PROTEIN MAY
NOT ONLY SERVES A FUNCTION IN PLASMID MAINTENANCE, BUT MAY ALSO
CONTRIBUTES TO THE DISTRIBUTION OF SMALL ANTIBIOTIC RESISTANCE
PLASMIDS AMONG GRAM-POSITIVE BACTERIA.

-!- MISCELLANBOUS: PRE PROTEINS CONTAIN CONSREVED POSITIVELY CHARGED
AMINO ACIDS PROBABLY INVOLVED IN THE BINDING OF THE PRE PROTEIN TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SIMILARITY: TO OTHER PRE PROTEINS (FROM PLASMIDS PUB110, PMV158, PE194, PT181, PT8913), IN THEIR N-TERMINAL ONLY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 403;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              115 115 DNA (POTENTIAL).
403 AA; 47839 MW; 875867A394000FC1 CRC64;
                                                     21-JUL-1986 (Rel. 01, Created)
01-FEB-1996 (Rel. 33, Last sequence update)
01-FEB-1996 (Rel. 33, Last annotation update)
Plasmid recombination enzyme (Mobilization protein)
PRE OR MOB.
                                                                                                                                                                                                                          Plasmid pB194.
Bacteria, Firmicutes, Bacillales, Staphylococcus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ;;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    182 AA
                          403 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28.0%; Score 53; DB 40.0%; Pred. No. 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8; Mismatches
                          PRT;
                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
MEDLINE=82167187; Pubmed=6279574;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 :| : ||||:::::| ||:::
100 IERFFKDSLEFLENEYGKEN 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14 VENYAKDSLQWITDQYNKES 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pre.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; V01278; CAA24593.1; -. InterPro; IPR001668; Mob_Pre Pfam; PF01076; Mob_Pre; 1. Plasmid; DNA-binding.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8; Conservative
                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         45
115
                                                                                                                                                                                                        Staphylococcus aureus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           THE RSA SITE.
                                                                                                                                                                                                                                                                                NCBI_TaxID=1280;
  D03857:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DRTS_PLAVN
ID DRTS_PLAVN
AC P46103;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BINDING
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PRE1 STAAU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OBEDITA
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Gaps

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01-DEC-1992 (Rel. 24, Created)
01-DEC-1992 (Rel. 24, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Myosin regulatory light chain, striated muscle, 25 kDa isoform (LC25).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LYSERICH (BASIC).

EF-HAND (BY SIMILARITY).

T -> A (IN 20% OF THE MOLECULES).

D -> N (IN 20% OF THE MOLECULES).

GPD -> DES (IN 20% OF THE MOLECULES).

GR -> AA (IN 20% OF THE MOLECULES).

F -> Y (IN 20% OF THE MOLECULES).

GT -> SS (IN 20% OF THE MOLECULES).
                                                                                                                                                                                                     Lúmbricus terrestris (Common earthworm).
Bukaryota, Metazoa, Annelida, Clitellata, Oligochaeta, Haplotaxida,
Lumbricina, Lumbricidae, Lumbricus.
                                                                                                                                                                                                                                                                                                                                                                                                               -i- FUNCTION: Plays an important role in regulation of muscle cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;
                                                                                                                                                                                                                                                                                                                                                                                                                                   contractile activity.
                                                                                                                                                                                                                                                                                                            MEDLINE=93145966; PubMed=8425543;
Serwe M., Meyer H.B., Craig A.G., Carlhoff D., D'Haese J.;
"Complete amino acid sequence of the regulatory light chain of
obliquely striated muscle myosin from earthworm, Lumbricus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  141 L -> V (IN 20% OF THE MOLECULES)
168 V -> L (IN 20% OF THE MOLECULES)
21945 MW, 348F85E84D4E7F73 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 1; Length 195;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -!- MISCELLANEOUS: This chain binds calcium.
-!- SIMILARITY: TO OTHER EF-HAND CALCIUM BINDING PROTEINS.
PIR; $28845; $28845.

PIRSP; P13543; 1SCM.
InterPro; IPRO02048; EF-hand.
Pfam; PF00036; efhand; 2.
Propom; PF000012; EF-hand; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 p07026; P76313;
01-APR-1988 (Rel. 07, Created)
NOV-1997 (Rel. 35, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
195 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 53; DB
Pred. No. 6.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3, Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SMART; SM00054; EFH; 2.
PROSITE; PS00018; EF HAND; 1.
Myosin; Calcium-binding; Muscle protein.
                                                                                                                                                                                                                                                                                                                                                                                                  Eur. J. Biochem. 211:341-346(1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   :| | | | : |||||:
145 LEEYVKDLLTNVGDQYNKD 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Enterobacteriaceae; Escherichia.
NCBI_TaxID=562;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14 VENYAKDSLOWITDQYNKE 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28.0%;
52.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 52.6
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Regulatory protein sdiA.
SDIA OR B1916.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Escherichia coli.
                                                                                                                                                                                                                                                             NCBI_TaxID=6398;
                                                                                                                                                                                                                                                                                                                                                                                    cerrestris."
                                                                                                   MLR LUMTE
P80164;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SDIA ECOLI
                                                                                                                                                                                                                                                                                             SEQUENCE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
CA BIND
VARIANT
VARIANT
VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
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SDIA_ECOLI
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                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
PACCAD clade; Panicoideae; Andropogoneae; Zea.
                  LUMINAL BINDING PROTEIN 2.
N-LINKED (GLCNAC. . ) (POTENTIAL).
PREVENT SECRETION FROM BR.
6769B7D19A0D918A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LUMINAL BINDING PROTEIN 3.
N-LINKED (GLCNAC. . .) (POTENTIAL)
PREVENT SECRETION FR.
A710278D9F692723 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro; IPRULLY23, ...c.
PROMINE; PRO0121; HBATGHOCKTO.
PRODEM; PRO01301; HBATGHOCKTO.
PRODEM; PS000309; HSP7001.
PROSITE; PS000329; HSP7002; 1.
PROSITE; PS01036; HSP7002; 1.
PROSITE; PS01036; HSP7003; 1.
PROFINITION Multigene family; Signal.
ATP-binding; Endoplasmic reticulum; Multigene family; Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 54; DB 1; Length 663; Pred. No. 18;
                                                                                                     DB 1; Length 663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14; Indels
                                                                                                                                       14; Indels
                                                                                                                                                                                                                                                                                                                               15-DEC-1998 (Rel. 37, Created)
15-DEC-1998 (Rel. 37, Last sequence update)
16-CCT-2001 (Rel. 40, Last annotation update)
Luminal binding protein 3 precursor (BiP3).
                                                                                                                                                                                                                                                                                                 663 AA
                                                                                                                                                                                               6; Mismatches
                                                                                                                                       6; Mismatches
                                                                                                                                                                         6 LSVHEVMAVENYAKDSLQWITDQYNKESDD 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LSVHEVMAVENYAKDSLQWITDQYNKESDD 35
                                                                                                     Score 54; I
Pred. No. 18
     POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR000886; ER target_S.
InterPro; IPR001023; Hsp70.
 21 PO
663 LU
614 N-
663 PR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         73156 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; U58209; AAC49900.1; -. PIR; T04080; T04080.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28.6%;
                                                                                                                       Best Local Similarity 33.3%;
Matches 10; Conservative
                                                                                                        28.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10; Conservative
                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                    Zea mays (Maize)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=4577;
                                                                                                                                                                                                                                                                                               BIP3 MAIZE
                   CHAIN
CARBOHYD
SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                    SEQUENCE
                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                            024581
   SIGNAL
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BI PE3

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Gaps

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Matches

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PIR; JQ0966; JQ0966.
PIR; T04078; T04078.
257 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P19120; 3HSC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=4577;
                                                                                                                                                                                                                                                                                                                                                                                                                                             Zea mays (Maize)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MaizeDB; 66083;
                                                                                                                                                                                                                                                                             BIP2 MAIZE
  SEQUENCE
                                         Query Match
                                                                                                                                                                                                                                                                                              P24067
                                                                                                                                                                                                                                                     MAIZE
                                                                                Matches
                                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                            ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mechanism in iron release.";
J. Biol. Chem. 276:19575-19579(2001).
-!- FUNCTION: Ferritin is an intracellular molecule that stores iron in a soluble, nontoxic, readily available form. The functional molecule, which is composed of 24 chains, is roughly spherical and contains a central cavity into which the polymeric ferric iron
                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids; eurosids I; Fabales; Fabaceae; Papilionoideae; Phaseoleae; Glycine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=21276460; PubMed=11278898;
Masuda T., Goto F., Yoshihara T.;
"A novel plant ferritin subunit from soybean that is related to a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Iron, Metal-Dinding, Chloroplast, Transit peptide.
1 S1 CHLOROPLAST (POTENTIAL).
                                                                                                                                                                                          1;
                                                                                                                                                 DB 1; Length 430;
                                                                                                                                                                                        3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         core is deposited.
SUBCELLULAR LOCATION: Chloroplast.
SIMILARITY: Belongs to the ferritin family.
SIMILARITY: Contains 1 ferritin-like diiron domain.
                                                                                                      430 AA; 50052 MW; FFDC831DB67C1C6C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FERRITIN-LIKE DIIRON.
IRON (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FERRITIN 2.
EXTENSION PEPTIDE (EP)
                                                                                                                                                                                                                                                                                                                                                                                              10-OCT-2003 (Rel. 42, Created)
10-OCT-2003 (Rel. 42, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
Ferritin 2, chloroplast precursor (SFerH-2).
                                                                                                                                                                                                                                                                                                                                                                                 257 AA.
                                                                                                                                                                                          6; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; AB062754; BAB60683.1; -.
InterPro; IPR001519; Ferritin.
InterPro; IPR00331; Ferritin.Dps.
InterPro; IPR009040; Ferritin.like.
Pfam; PF00210; ferritin; 1.
ProDom; PD000971; Ferritin; 1.
PROSITE; PS00940; FERRITIN.l; FALSE_NEG.
PROSITE; PS00940; FERRITIN.l; FALSE_NEG.
                                                                                                                                                 31.5%; Score 59.5; 52.4%; Pred. No. 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          entities requires a license agreement (Se or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                     14 VENYA-KDSLQWITDQYNKES 33
                       InterPro; IPR000541; UPF0021.
Pfam; PF01171; ATP_bind3; 1.
Complete proteome.
SEQUENCE 430 AA; SORE? MY
                                                                                                                                          Query Match
Best Local Similarity 52.4'
Matches 11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                   STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   51
257
84
238
1102
1136
1139
1140
1186
PIR; D64151; D64151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=3847;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Iron storage;
FRANSIT
                     TIGR; HI0404;
                                                                                                                                                                                                                                                                                                                                                                                   SOYBN
                                                                                                                                                                                                                                                                                                                                                                                 FRI2 SOY
Q94IC4;
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DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                         FRI2_SOYBN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  METAL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Fonces E.B.P., Shank B.B., Wrobel R.L., Moose S.P., Obrian G.R., Wurtzel B.T., Boston R.S.;
"Characterization of an immunoglobulin binding protein homolog in the maize floury-2 endosperm mutant.";
Plant Cell 3:483-496(1991).
-!- FUNCTION: Probably plays a role in facilitating the assembly of multimeric protein complexes inside the ER.
-!- SUBCELLULAR LOCATION: Endoplasmic reticulum lumen.
                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN=CV. Floury-2; TISSUE=Kernel;
MEDLINE=980944560; PubMed=9434171;
MEDLINE=98094560; PubMed=9434171;
MCDel R.L., Obrian G.R., Boston R.S.;
"Comparative analysis of BiP gene expression in maize endosperm.";
Gene 204:105-113(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Edea mays (maize).
Edearyota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Lillopsida; Poales; Poaceae;
PACCAD clade; Panicoideae; Andropogoneae; Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -!- INDUCTION: By treatment with tunicamycin. Overproduced in fl2, defective endosperm-b30, and mucronate mutants.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15-DEC-1998 (Rel. 37, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Luminal binding protein 2 precursor (BiP2) (Heat shock protein homolog 2) (B70) (B-70).
                                                                                                                                      4
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PROSITE; PS00297; HSP70_1; 1.
PROSITE; PS00297; HSP70_2; 1.
PROSITE; PS01036; HSP70_3; 1.
PROSITE; PS00014; ER TARGET; 1.
ATP-binding; Endoplasmic reticulum; Multigene family; Signal.
                                                                     DB 1; Length 257;
                                                                                                                                   Indels
28731 MW; 9BACC4531D853EB9 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 197-663 FROM N.A., AND CHARACTERIZATION
                                                                                                                                   10;
                                                                                                                                                                                                                                       2 KKTFLSV---HEV-MAVENYAKDSLQWITDQYNKE
                                                              29.1%; Score 55; DB 1
45.7%; Pred. No. 4.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                             663 AA
                                                                                                                                      5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A., AND CHARACTERIZATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN=cv. Floury-2; TISSUE=Kernel; MEDLINE=93005712; PubMed=1840923;
                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; U58208; AAC49899.1; -.
EMBL; M59449; AAA92743.1; ALT_TERM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR000886; ER target_S.
InterPro; IPR001023; HSp70.
Pfam; PF00012; HSP70; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRINTS; PR00301; HEATSHOCK70.
                                                                                                Local Similarity 45.7
hes 16; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
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C STRAIN-C57BL/65; TISSUE-Epididymis; KWANIN-C57BL/65; TISSUE-Epididymis; KWANIN-C57BL/65; PubMed=121785; KWANIN-C57BL/65; PubMed=121785; KWANIN-C57BL/65; PubMed=121785; KWANIN-C57BL/65; PubMed=121785; KWANIN-C57BL/65; PubMed=121785; KWANIN-C57BL/65; PubMed A., Fukunishi Y., Konno H., Adachi J., Fukuda S., Alzawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I., Asato T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R., Asato T., Gissi C., King B., Kochiwa H., Kadota K., Matsuda H.A., Asaburner M., Batalov S., Casavant T., Ashimil F., Kourlin P., Gissi C., King B., Kochiwa H., Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G., Asakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G., Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F., Bronsetin M.J., Bult C., Fletcher C., Fullita M., Gariboldi M., Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P., Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N., Asakamin H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F., Whyshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S., Marsari, V., Marshi, V., Wali, V., Kawaji H., Kohtsuki S., Marsari, V., Walli, V., Kawaji H., Kohtsuki S., Marsari, V., Walli, V., Kawaji H., Kohtsuki S., Marsari, V., Walin V., Kawaji H., Kohtsuki S., Marsari, V., Walin W., K., Washi W., Kawaji H., Kohtsuki S., Kawai, V., Kawaji H., Kohtsuki S., Marsari, V., Kawaji H., Kawashi V., Kawaji H., Kohtsuki S., Kawai V., Kawai V.
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institutions as long as its content is in no
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                                                                                                                                                                                                                                                                                                                                                            SECONDARY AREA OF CONTACT (POTENTIAL). BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus musculus (Mouse).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hayashizaki Y.; "Functional annotation of a full-length mouse cDNA collection.";
                                                                                                                                                                                                                                                                                                                                                                                                                                   N-LINKED (GLCNAC. . .) (POTENTIAL)
Missing (in isoform 2),
/FIId=VSP 001260.
CSBSCRGZ9ASBSC3B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 137;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                        EMBL; AL096677; CAC13170.1; -.
EMBL; AL096677; CAC17423.1; -.
HSSP; P01038; 1A90.
Genew; HGNC:15959; CST11.
InterPro; IPR000010; Cystatin.
Pfam; PF00031; Cystatin; 1.
SMART; SM00043; CY; 1.
PROSITE; PS00287; CYSTATIN; FALSE_NEG.
Thiol protease inhibitor; Signal; Alternative splicing. SIGNAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 189; DB 1;
Pred. No. 3.6e-18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           26 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 61
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-!- SUBCELLULAR LOCATION: Secreted (Potential).
-!- SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ZB-FEB-2003 (Rel. 41, Created)
28-FEB-2003 (Rel. 41, Last sequence update)
Cyctatin 11 precursor.
                       modified and this statement is not removed. entities requires a license agreement (See hor send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Mismatches
                                                                                                                                                                                                                                                                                                                                                  CYSTATIN 11.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             137 AA; 16375 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 100.
Best Local Similarity 100.
Matches 36; Conservative
                                                                                                                                                                                                                                                                                                                                                                     .79
101
134
131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CS11 MOUSE
Q9D269;
                                                                                                                                                                                                                                                                                                                                                                        SITE
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
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        between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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This SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Whole-genome random sequencing and assembly of Haemophilus influenzae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE=95350630; PubMed=7542800; RELINE=95350630; PubMed=7542800; Pleischmann R.D., Adams M.D., White O., Clayton R.A., Kirkness E.F., Kerlavage A.R., Bult C.J., Tomb J.-F., Dougherty B.A., Merrick J.M., McKenney K., Sutton G., Fitzhugh W., Fields C.A., Gocayne J.D., Soct J.D., Shirley R., Liu L.-I., Glodek A., Kelley J.M., Weidman J.E., Phillips C.A., Spriggs T., Hedloum E., Cotton M.D., Pine L.D., Fritchman J.L., Fuhrmann J.L., Geoghagen N.S.M., Gnehm C.L., McDonald L.A., Small K.V., Fraser C.M., Smith H.O.,
                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                     CYSTATIN 11.
SECONDARY AREA OF CONTACT (POTENTIAL).
BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                          . .) (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacteria; Proteobacteria; Gammaproteobacteria; Pasteurellales;
Pasteurellaceae; Haemophilus.
                                                                                                                                                                                                                                                                                                                                                                                                            Length 139;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Science 269:496-512(1995).
-!- SIMILARITY: BELONGS TO THE UPF0072 (MESJ/YCF62) FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                          134 N-LINKED (GLCNAC. . .) (PC
16217 MW; F228D9815FA32640 CRC64;
                                                                                                                                                                                                                                                                                                                                                                              6217 Pm,
55.0%; Score 104; DB 1; Le
7. Pred. No. 7.1e-07;
5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 RKKIFLSVHEVMAVENYAKDSLQWITDQYNKESDD 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-NOV-1995 (Rel. 32, Created)
01-NOV-1995 (Rel. 32, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27 KRKTFIRIBEVSALESSVKETLEYVTDEYNKKSED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    430 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Putative cell cycle protein mesJ homolog
                                                                                                                                                                                                                                                                       POTENTIAL.
                                                                                                                                                                                                                                       CYSTATIN; FALSE NEG.
                                                                                                                                                                                                                                                     Thiol protease inhibitor, Signal
                                                                                                                                                                  MGD; MGI:1925490; CBtll.
InterPro; IPR000010; Cystatin.
Pfam; PF00031; Cystatin; 1.
SWART; SM00043; CY; 1.
PROSITE; PS00287; CYSTATIN; FAL
                                                                                                                                 EMBL; AKO20300; BAB32061.1; -.
HSSP; P01034; 1G96.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; U32723; AAC22063.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                             16; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
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139
80
102
135
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                                                                                                                                                                                                                                                                                                                                                                          139 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=727;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MESJ OR HI0404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Venter J.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MESJ HAEIN
P44689;
                                                                                                                                                                                                                                                                                                                         DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
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MESJ_HAEIN
                                                                                                                                                                                                                                                                                          CHAIN
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GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
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OM protein - protein search, using sw model

March 18, 2004, 14:02:50 ; Search time 4.28571 Seconds
 (without alignments)
 437.389 Million cell updates/sec Run on:

US-09-941-314-6

189 1 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 36 Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

141681 segs, 52070155 residues Searched:

141681

Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 08
Maximum Match 1008
Listing first 45 summaries

SwissProt_42:* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES	Description	HUMAN 09h112 homo sapien	NOUSE Q9d269 mus m	P44689	Q94ic4	P24067 zea mays	024581	P80164 lumb	P07026	P03857	P46103	P13581	003683	Q03681	Q03682	003686	0dxn60	0800×0	059132	P49118	003684	Q03685		P48722	P75471	O9nah2	_	Q07960 homo sa	^1	N Q15431 homo sa	10	3 Q9v0t9	
ST	Ωï	CS11 F	CS11_N	MESJ_H	FRI2 S	BIP2_N	BIP3 MAIZE	MLR LL				HEM1_6	BIP3_1	BIP1 TOBAC	BIP2_7	BIP8_7	MER METTI	GATD	GATD PYRHO	BIP LYCES	BIP4 TOBAC	BIP5_T	BIP SE	0S94 N	HMW2_N	TX34 C	ı			<u>'</u> _'	MER ME	GATD	GAO
	DB		Н	-	Н	-	-	-	-1	-	-	-1	Н	Н	-1	-	-1	-	-1	-1	Н	-	٦	Ч	Ч	Н	Н	Н	Н	ч	Ч	-	-
	Length	137	139	430	257	663	663	195	240	403	182	418	168	290	292	293	326	438	438	999	667	999	999	838	1818	302	418	439	611	916	328	438	727
de	Query Match	100.0			29.1		28.6	28.0					27.0	27.0		27.0	27.0	27.0	27.0	27.0	27.0		27.0	27.0								25.9	о п
	Score	18	104		52		54	53	53	23	'n	51.5	51	51	51	51	51	51	51	51	51	51	51	51	51	20	٠,	ď.	ę.	•	49	49	0,
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Q9hj89 thermoplasm P40189 homo sapien	Q8cub8 staphylococ Q59395 erwinia car P40334 lactobacill		OS1116 borrelia bu Q9uze8 pyrococcus	
LON1_THEAC IL6B_HUMAN	FAH2 STAEP GUNW ERWCA PRPX LACDI	PEPX_LACHE TPSX_SCHPO	Y089_BORBU YC00_PYRAB	VIPB_SALTI CG2A_PATVU PST1_YEAST
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657 918	326 504 792	793 944	324	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
25.9	25.7	25.7	25.4	25.4 25.4 25.4
4 4 0 0	4 4 8 . 5 . 5 . 5 . 5 . 5 . 5 . 5 . 5 . 5 .	48.5	8 4 4 8 8 6	4 4 4 3 8 8
34 35	36 37 8	3.6 6.0 6.0	144	4 4 4 2 4 8

ALIGNMENTS

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The invention describes an isolated mammalian cystatin-8 (Zcys8)

polypeptide (I). (I) is useful for: inhibiting cancer procoagulant

protein in an individual and thus inhibiting the thromobic events

associated with cancer; promoting spermatogenesis, modulating seminal

fluid viscosity, enhancing viability of cryopreserved sperm, sperm

motility and fertilisation; and as antigenic peptides to generate

antibodies. Zcys8 is useful as research reagent for characterising sites

of interaction between Zcys8 and its receptor. Zcys8 is useful in

animals. Anti-(I) antibodies are useful to screen biological samples like

animals. Anti-(I) antibodies are useful to cisolate large

chancing fertilisation during assisted reproduction in humans and in

animals. Anti-(I) antibodies are also useful to isolate large

presence of Zcys8. The antibodies are also useful to isolate large

cycesnic of Zcys8 protein and DNA sequences that encode Zcys8 genes.

The polynucleotide encoding (I) is useful to detect and to localise the

expression of a Zcys8 gene in a biological sample and Zcys8

coligonucleotide encoding (I) is useful in determining whether a subject's

chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene

copy number changes, insertions, deletions, restriction site changes and
                copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zcys8 gene. This sequence represents an antigenic fragment of human cystatin-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene
                                                                                                                                                                                           Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      spermatogenesis; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation.
                                                                                                                                                    Length 117;
                                                                                                                                                                                           Indels
                                                                                                                                                                                           ö
                                                                                                                                                    100.0%; Score 189; DB 5; 100.0%; Pred. No. 2.9e-18;
                                                                                                                                                                                                                             1 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 36
                                                                                                                                                                                                                                                   6 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 41
                                                                                                                                                                                           0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 2; Page 93-94; 100pp; English
                                                                                                                                                                                                                                                                                                                                                                 AAU79852 standard; protein; 137 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bishop PD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29-AUG-2001; 2001WO-US026868.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-SEP-2000; 2000US-0230230P.
                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human cystatin-8 (Zcys8).
                                                                                                                                                                    Local Similarity 100.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (ZYMO ) ZYMOGENETICS INC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2002-383044/41.
N-PSDB; ABK49522.
                                                                                                              Sequence 117 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200220567-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens.
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                                                                                                                                                                                                                                                                                                                                                                                                      AAU79852;
                                                                                                                                                    Query Match
                                                                            (Zcys8)
                                                                                                                                                                                         Matches
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rearrangements and genetic alterations that inactivate the Zcys8 gene. This is the amino acid sequence of human cystatin-8 (Zcys8)
                                                                                                       Gaps
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                                                                       Length 137;
                                                                                                     Indels
                                                                                                         ö
                                                                                                                                    1 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 36
                                                                         ; Score 189; DB 5;
; Pred. No. 3.5e-18;
0; Mismatches 0;
                                                                         100.0%;
100.0%;
                                                                                                         36; Conservative
                                                                         Query Match
Best Local Similarity
Matches 36; Conserv
                                            Sequence 137 AA;
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Search completed: March 18, 2004, 14:14:58 Job time : 33.6429 secs

26 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 61

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cancer, chronic obstructive pulmonary disease (COPD), interstitial lung disease (ILD), familial idiopathic pulmonary fibrosis, neurofibromatosis, tuberous sclerosis, Gaucher's disease, Niemann-Pick disease, Hermansky-Pudlak syndrome, sarcoidosis, pulmonary haemosiderosis, pulmonary histiocytosis, pulmonary histiocytosis, pulmonary hypertensis, pulmonary dysplasia, primary ciliary dyskinesis, pulmonary hypertension and hyaline membrane disease. The present sequence is a peptide/protein encoded by a single exon probe of the invention. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format
                                                                                                                                                                                                                                                                                                          directly from WIPO at ftp.wipo.int/pub/published_pct_sequences
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Sequence 50 AA;

.. 0 100.0%; Score 189; DB 5; Length 50; 100.0%; Pred. No. 1e-18; ive 0; Mismatches 0; Indels 1 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 36 Query Match
Best Local Similarity 100.0

1 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 36

g

RESULT 13 AAU79853

AAU79853 standard; protein; 115 AAU79853;

(first entry) 15-JUL-2002

Human cystatin-8 (Zcys8) antigenic fragment #1.

Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation; antigenic fragment.

Homo sapiens

WO200220567-A2

14-MAR-2002.

ķ 29-AUG-2001; 2001WO-US026868.

01-SEP-2000; 2000US-0230230P.

(ZYMO) ZYMOGENETICS INC

Bishop PD; Gao Z, Holloway JL,

WPI; 2002-383044/41.

Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.

2; Page 94; 100pp; English Claim

polypeptide (I). (I) is useful for: inhibiting cancer proceedablat protein in an individual and thus inhibiting cancer proceedalant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm motility and fertilisation; and as antigenic peptides to generate antibodies. Zcys8 is useful as research reagent for characterising sites of interaction between Zcys8 and its receptor. Zcys8 is useful in enhancing fertilisation during assisted reproduction in humans and in animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcys8. The antibodies are also useful to isolate large quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes. The polynucleotide encoding (I) is useful to detect and to localise the The invention describes an isolated mammalian cystatin-8 (Zcys8)

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expression of a Zcys8 gene in a biological sample and Zcys8 oligonucleotide probes are useful for in vivo diagnosis. The polynucleotide encoding (1) is useful in determining whether a subject's chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes rearrangements and genetic alterations that inactivate the Zcys8 gene. This sequence represents an antigenic fragment of human cystatin-8
                                                                                                                                                                                                                                                                   Gaps
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                                                                                                                                                                                                                         Length 115;
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                                                                                                                                                                                                                           100.0%; Score 189; DB 5; 100.0%; Pred. No. 2.8e-18;
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                                                                                                                                                                                                                                                                   0; Mismatches
                                                                                                                                                                                                                                                                   36; Conservative
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Best Local Similarity
                                                                                                                                                                                     Sequence 115 AA;
                                                                                                                                                  (Zcys8)
                                                                                                                                                                                                                                                                 Matches
      8888888888
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4 RKKTFLSVHEVMAVENYAKDSLQMITDQYNKESDDK 39

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Gaps

1 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 36

RESULT 14

Æ AAU79854 standard; protein; 117

AAU79854;

15-JUL-2002

Human cystatin-8 (Zcys8) antigenic fragment #2.

Cystatin-8; Zcy88; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation; antigenic fragment.

Homo sapiens.

WO200220567-A2.

14-MAR-2002.

29-AUG-2001; 2001WO-US026868

01-SEP-2000; 2000US-0230230P

(ZYMO) ZYMOGENETICS INC.

Bishop PD; Gao Z, Holloway JL,

WPI; 2002-383044/41.

Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.

Claim 2; Page 94-95; 100pp; English.

The invention describes an isolated mammalian cystatin-8 (Zcys8)

CC polypeptide (I). (I) is useful for: inhibiting cancer procoagulant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm contility and fertilisation; and as antigenic peptides to generate cartibodises. Zeys8 is useful as research reagent for characterising sites of interaction between Zeys8 and its receptor. Zeys8 is useful in continual and in humans and in continual. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the polyoutleoride encoding (I) is useful to detect and to localise the capteristics of Zeys8 protein and DNA sequences that encode Zeys8 genes.

CC quantities of Zeys8 protein and DNA sequences that encode Zeys8 genes.

CC quantities of Zeys8 protein and and propay and to isolate large contropic encoding (I) is useful to detect and to localise the captersion of a Zeys8 gene in a biological sample and Zeys8 coligonucleotide encoding (I) is useful in vivo diagnosis. The polymucleotide encoding (I) is useful in determining whether a subject's

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Human peptide encoded by genome-derived single exon probe SEQ ID 26568.
                                                                                                                     chronic obstructive pulmonary disease; interstitial lung disease; familial idiopathic pulmonary fibrosis; neurofibromatosis; tuberous sclerosis; gaucher's disease; Niemann-Pick disease; Hermansky-Pudlak syndrome; sercoidosis; pulmonary histiccytosis; pulmonary histiccytosis; pulmonary alveolar proteinosis; fibrocystic pulmonary dysplasia; pulmonary ciliary dyskinesis; pulmonary hypertension;
                                                                                                         Human; single exon probe; asthma; lung cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   measure gene expression in human lung samples.
           ABG36903 standard; peptide; 50 AA.
                                                                                                                                                                                                                                                                                                                                                                                           21-SEP-2000; 2000US-0234687P.
27-SEP-2000; 2000US-0236359P.
                                                                                                                                                                                                                                                                                                                  30-JAN-2001; 2001WO-US000665
                                                                                                                                                                                                                                                                                                                                                                                                                      04-OCT-2000; 2000GB-00024263
                                                            19-AUG-2002 (first entry)
                                                                                                                                                                                                    primary ciliary dyskines
hyaline membrane disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Spatially-addressable
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                                                                                                                                                                                                                                                                 WO200186003-A2
                                                                                                                                                                                                                                          Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                        26-MAY-2000;
                                                                                                                                                                                                                                                                                                                                           04-FEB-2000;
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                                                                                                                                                                                                                                                                                          15-NOV-2001
                                    ABG36903;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Penn SG,
 ABG36903
                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The present invention relates to novel single exon nucleic acid probes (see AA100010-AA110067). The present sequence is a peptide encoded by one such probes. The probes are useful for measuring human gene expression in a human breast sample, where the probe hybridises at high stringency to a nucleic acid expressed in the human breast. The probes are useful for predicting, diagnosing, grading, staging, monitoring and prognosing diseases of the human breast, particularly those diseases with polygenic actiology. The diseases include: breast cancer, disorders of development, inflammatory diseases of the breast, fibrocystic changes, proliferative this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Novel single exon nucleic acid probe used to measuring gene expression in
                                                                                                                                                                                                               Probe; human; breast disease; breast cancer; development disorder; inflammatory disease; proliferative breast disease; non-carcinoma tumour.
 Gaps
                                                                                                                                                                                        Peptide #1515 encoded by probe for measuring breast gene expression.
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Indels
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                                    1 RKKTFLSVHEVMAVENYAKDSLOWITDOYNKESDDK 36
0; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rank DR;
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                                                                                                              AAM02833 standard; protein; 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                           (MOLE-) MOLECULAR DYNAMICS INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chen W,
                                                                                                                                                                                                                                                                                                                                                                                          03-AUG-2000; 2000US-00632366.
21-SRP-2000; 2000US-0234687P.
27-SRP-2000; 2000US-0235599.
4-OCT-2000; 2000GB-00024263.
                                                                                                                                                                                                                                                                                                                                                                  2000US-0207456P
2000US-00608408
                                                                                                                                                                                                                                                                                                                               29-JAN-2001; 2001WO-US000661
                                                                                                                                                                                                                                                                                                                                                        2000US-0180312P
                                                                                                                                                              (first entry)
36; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2001-476286/51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 50 AA;
                                                                                                                                                                                                                                                                              WO200157270-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a human breast
                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                     26-MAY-2000;
30-JUN-2000;
                                                                                                                                                               09-OCT-2001
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                                                                                                                                       AAM02833;
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Matches
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The invention relates to a spatially-additesation in a sample derived from human lung comprising single exon nucleic acid probes for measuring gene expression in a sample derived from human lung comprising single exon nucleic acid probes having one of 12614 nucleic acid sequences mentioned in the specification, or their complements or the 1237 open reading frames derived from the 12614 probes. Also included are a microarray comprising the novel set of probes which hybridise at high stringency to a nucleic acid expressed in the human lung; measuring gene expression in a sample derived from human lung, comprising (a) contacting the array with a collection of detectably labeled nucleic acids derived from human lung measuring the label detectably bound to each probe of the array; identifying exons in a eukaryotic genome, comprising (a) algorithmically predicting at least one exon from genomic sequences of the eukaryote; and (b) detecting specific hybridisation of detectably labeled nucleic acids from eukaryote lung mRNM, to a single gene, comprising (a) identifying exons from genomic sequence by the method above and (b) measuring the expression of each of the exons in several tissues and/or cell types using hybridisation to a single exon comprising one comprising (b) measuring the expression of each of the exons in the expression of the exons in the tissues and/or cell types using hybridisation, or encoded by the expression certain a peptide comprising one collished to a single gene; a peptide comprising one collished probe when the exons in the specification, or encoded by the probes/open reading frames (ORF). The probes are used for gene expression canalysis, and for identifying exons in a gene, particularly using human lung derived mRNA and for the study of lung diseases such as asthma, lung
                                                                                                                                           The invention relates to a spatially-addressable set of single
Claim 27; SEQ ID NO 26568; 634pp; English.
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Gaps

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0; Indels

1 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 36

100.0%; Score 189; DB 4; Length 50;

1e-18;

100.08;

Local Similarity

Query Match Best Loca Matches

Conservative

36;

ઠે a RESULT 12

0; Mismatches

set of single exon nucleic acid probes, used to

Rank DR

Chen W,

Hanzel DK,

(MOLE-) MOLECULAR DYNAMICS INC

2000US-0207456P 2000US-00632366

10-JUN-2000;

2000US-0180312P

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Query Match
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                                                                                                    The present invention provides a number of single exon nucleic acid probes which are derived from genomic sequences expressed in the human bone marrow. They can be used to measure gene expression in bone marrow samples, which may enable the improved diagnosis and treatment of cancers such as lymphoma, leukaemia and myeloma. The present sequence is a protein encoded by one of the probes of the invention
                                                   Human genome-derived single exon nucleic acid probes useful for analyzing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present invention provides a number of single exon nucleic acid probes which are derived from genomic sequences expressed in the human brain. They can be used to measure gene expression in brain cell samples, which may enable the diagnosis and improved treatment of nervous system diseases such as Alzheimer's disease, multiple sclerosis, schizophrenia,
                                                                                                                                                                                                                                                                                                                                                                                    Human brain expressed single exon probe encoded protein SEQ ID NO: 26976.
                                                                                                                                                                                                                                                                                                                                                                                                       Human; brain expressed exon; gene expression analysis; probe; microarray;
Alzheimer's disease; multiple sclerosis; schizophrenia; epilepsy; cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Single exon nucleic acid probes for analyzing gene expression in human
                                                                                                                                                                                                                         Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Example 4; SEQ ID NO 26976; 650pp + Sequence Listing; English.
                                                                                  Example 4; SEQ ID NO 27558; 658pp + Sequence Listing; English.
                                                                                                                                                                                                    100.0%; Score 189; DB 4; Length 50; 100.0%; Pred. No. 1e-18;
                                                                                                                                                                                                                         0; Indels
                                                                                                                                                                                                                                             1 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 36
                                                                                                                                                                                                                                                          0; Mismatches
           Rank DR
                                                             gene expression in human bone marrow.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rank
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         Chen W,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Chen W,
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2000US-0207456P.
2000US-00608408.
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21-SEP-2000; 2000US-0234687P.
27-SEP-2000; 2000US-0236359P.
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                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                         36; Conservative
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           Hanzel DK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2001-483446/52
                                                                                                                                                                                                               Similarity
                                                                                                                                                                               Sequence 50 AA;
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         Penn SG,
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Best Local 9
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human genome-derived single exon nucleic acid probes useful for analyzing gene expression in human adult liver.
epilepsy and cancers. The present sequence is a protein encoded by one the probes of the invention
                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human; liver; cirrhosis; hyperlipoproteinaemia; hyperlipidaemia; hypercholesterolaemia; coronary heart disease.
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                                                                                                                                               4; Length
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Pred. No. 1e-18;
                                                                                                                                                                                                                                                      1 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 36
                                                                                                                                                                                                                                                                                         RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK
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0; Mismatches
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                                                                                                                                                  Score 189;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABG48915 standard; peptide; 50
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03-AUG-2000; 2000US-00632366.
21-SEP-2000; 2000US-0234687P.
27-SEP-2000; 2000US-0236359P.
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                                                                                                                                                                        Similarity
                                                                                             Sequence 50 AA;
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measuring human gene expression in a sample derived from human heart (see ABA21535-ABA41305). The present sequence is a protein encoded by one such probe. The probes may be used for predicting, measuring and displaying gene expression in samples derived from the human heart via microarrays. By measuring gene expression, the probes are useful for predicting, diagnosing, grading, staging, monitoring and prognosing diseases of the human heart and vascular system e.g. cardiovascular disease. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO
                                                                                                                                                                                                                                                                                                                Single exon nucleic acid probes for analyzing gene expression in human
                                                                                                                                                                                                                                                                                                                                                                                                                                   The present invention relates to single exon nucleic acid probes for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human; bone marrow expressed exon; gene expression analysis; probe;
microarray; cancer; leukaemia; lymphoma; myeloma.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                at ftp.wipo.int/pub/published_pct_sequences
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                                                                                                                                                                                                                                                                                                                                                                                      Claim 15; SEQ ID NO 21294; 530pp; English.
                                                                                                                                                                                                                           Chen W, Rank DR,
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2000US-0234687P.
2000US-0236359P.
2000GB-00024263.
                                                             03-AUG-2000; 2000US-00632366.
21-SEP-2000; 2000US-0234687P.
27-SEP-2000; 2000US-0236359P.
04-OCT-2000; 2000GB-00024263.
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2000US-00608408
2000US-0180312P
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Best Local Similarity 100.
Matches 36; Conservative
                                                                                                                                                                                                                           Hanzel DK,
                                                                                                                                                                                                                                                                   WPI; 2001-488899/53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 50 AA;
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30-JUN-2000;
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21-SEP-2000;
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                     26-MAY-2000;
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AAM67252
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ruccleic acid probes for measuring gene expression in a sample derived from human breast and BT 474 cells. The method involves contacting the probes with a collection of detectably labelled nucleic acids derived from many of human breast, and then measuring the label bound to each probe of the microarray. The probes are useful for verifying the expression of regions of genomic DNA predicted to encode proteins. They are useful for gene discovery, and for determining predisposition and/or prognosing breast disease. Gene expression analysis is useful for assessing the toxicity of chemical agents on cells. The microarrays of this invention presents after greater diversity of probes for measuring gene expression, with far less bias than expressed sequence tag microarrays. The method is suitable for rapid production of functional information from genomic sequence. The present sequence is a peptide information from genomic sequence. The present sequence is a peptide connecded by a single exon nucleic acid probe of the invention. Note: The sequence data for this patent did not form part of the printed connecded in the connecded probes of the invention. Note: The specification, but was obtained in electronic format directly from WIPO
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                                                                                                                                                                                                                                                                                                                                        New spatially-addressable set of single exon nucleic acid probes, useful for measuring gene expression in sample derived from human breast, comprises number of single exon nucleic acid probes.
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                                                                                                                                                                                                                                                  Rank DR;
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                                                                                     03-AUG-2000; 2000US-00632366.
21-SEP-2000; 2000US-023468TP.
7-SEP-2000; 2000US-023559P.
04-OCT-2000; 2000GB-00024263.
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                     2000US-0180312P.
2000US-0207456P.
2000US-00608408.
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Matches 36; Conserv
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                     04-FEB-2000; 26-MAY-2000; 30-JUN-2000; 2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 27; SEQ ID NO 15357; 327pp + Sequence Listing; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                    New spatially-addressable set of single exon nucleic for measuring gene expression in sample derived from comprises number of single exon nucleic acid probes.
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                                                                                                                                                                                                                                                                                   (MOLE-) MOLECULAR DYNAMICS INC
                                                                                             26-MAY-2000; 2000US-0207456P.
30-JUN-2000; 2000US-00608408.
03-AUG-2000; 2000US-00632366.
21-SEP-2000; 2000US-0234687P.
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                        30-JAN-2001; 2001WO-US000662.
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                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2001-496933/54.
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Matches
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ABB28913
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human genome-derived single exon nucleic acid probes useful for analyzing gene expression in human placenta.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present invention relates to single exon nucleic acid probes (SENP: see AA131315-AA157546). The present sequence is a peptide encoded by one such probe. The probes are useful for producing a microarray for predicting, measuring and displaying gene expression in samples derived from human placenta. The probes are useful for antenatal diagnosis of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human; microarray; single exon probe; gene expression; breast; disease;
                                                                                                                           Peptide #1582 encoded by probe for measuring placental gene expression.
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                                                                                                                                                                             Probe; microarray; human; placenta; antenatal diagnosis;
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30-UUN-2000; 2000US-00608408.
03-AUG-2000; 2000US-00633366.
21-SEP-2000; 2000US-023468PP-
27-SEP-2000; 2000US-0236359P-
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Best Local Similarity 100.
Matches 36; Conservative
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                                                                                                                                                                                                      genetic disorder
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                     AAM27545;
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Score 189; DB 4; Pred. No. 1e-18;

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Query Match 100. Best Local Similarity 100. Matches 36; Conservative

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Gaps

Sequence 50 AA;

0; Mismatches

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Human genome-derived single exon nucleic acid probes useful for analyzing gene expression in human cervical epithelial cells.
quantities of Zcy88 protein and DNA sequences that encode Zcy88 genes. The polynucleotide encoding (I) is useful to detect and to localise the expression of a Zcy88 gene in a biological sample and Zcy88 of a cys8 gene in a biological sample and Zcy88 of polynucleotide probes are useful for in vivo diagnosis. The polynucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation in the Zcy88 gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zcy88 gene. This sequence represents an antigenic fragment of human cystatin-8
                                                                                                                                                                                                                                                                                                                                                                                                                  Peptide #1530 encoded by probe for measuring cervical gene expression.
                                                                                                                                                                                                                                                                                                                                                                                                                                             Probe; human; microarray; gene expression; cervical epithelial cell;
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2000US-0207456P.
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                                                                                                                                                                                                           36; Conservative
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                                                                                                                                                                                            Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                             cervical cancer.
                                                                                                                                                      Sequence 36 AA;
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21-SEP-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human genome-derived single exon nucleic acid probes useful for analyzing
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                                                                                                                                                                                                                                   Human; foetal liver; gene expression; single exon nucleic acid probe.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      part of the printed specification, but was obtained in electrol
directly from WIPO at ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                      Peptide #1592 encoded by human foetal liver single exon probe.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 27; SEQ ID NO 26721; 639pp + Sequence Listing; English.
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1 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 36
                   1 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 36
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                                                                                                           ABB34086 standard; peptide; 50
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2000US-0234687P.
2000US-0236359P.
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2000US-0207456P.
2000US-00608408.
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27-SEP-2000;
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AAM27545
ID AAM2
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The present invention relates to human single exon nucleic acid probes (SENP: see AAI10068-AAI28459). The present sequence is a peptide encoded by one such probe. The SENPs are derived from human Hela cells. The SENPs can be used to produce a single exon microarray, which can be used for measuring human gene expression in a sample derived from human cervical epithelial cells. By measuring gene expression, the probes are therefore useful in grading and/or staging of diseases of the cervix, notably cervical cancer. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences

Claim 27; SEQ ID NO 19922; 487pp; English.

Protein e Enterohae

Protein e S. epider

Protein e Chlamydia

Protein

Original S. tubero

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Abu44069
Abu43069
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Abu4692
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Result Š.

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The invention describes an isolated mammalian cystatin-8 (Zcys8) polypeptide (I. (I) is useful for: inhibiting cancer procoagulant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm antibodies. Zcys8 is useful as antigenic peptides to generate antibodies. Zcys8 is useful as receptor. Zcys8 is useful in enhancing fertilisation during assisted reproduction in humans and in animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcys8. The antibodies are also useful to isolate large
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation; antigenic fragment.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human cystatin-8 (Zcys8) antigenic fragment #4.
              ABU44069
AAY35198
ABU28659
AAR10545
                                                                                ABU44692
ADC01083
ABU47755
AAG82725
ABP39544
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AAG22389
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ABU36321
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AAG51290
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WO200220567-A2
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                                                                                                                 March 18, 2004, 14:02:15; Search time 32.6429 Seconds (without alignments) 311.606 Million cell updates/sec
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Aau79859 B
Aau79863 B
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               GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                    1 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 36
                                                                                                                                                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                          1586107 segs, 282547505 residues
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Maximum Match 100%
Listing first 45 summaries
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ABB34086
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AAM64811
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Gapop 10.0 , Gapext 0.5
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geneseqp2002s:*
geneseqp2003as:*
geneseqp2003bs:*
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Maximum DB seq length: 200000000
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                                                                               Length 131;
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TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
FILE REPERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 13
LENGTH: 49
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ouery Match 29.1%; Score 55; DB 9; Length 27; Best Local Similarity 100.0%; Pred. No. 1.9; Matches 10; Conservative 0; Mismatches 0; Indels
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                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein FILE REFERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR PILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SEQ ID NO 9
LENGTH: 27
                                                                            Query Match 29.4%; Score 55.5; DB 12; Best Local Similarity 37.9%; Pred. No. 9; Matches 11; Conservative 7; Mismatches 10;
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100.0%; Pred. No. 3.6;
tive 0; Mismatches (
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, Sequence 13, Application US/09941314
; Patent No. US20020142396A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                  RESULT 14
US-09-941-314-9
; Sequence 9, Application US/09941314
; Patent No. US20020142396A1
; GENERAL INPORMATION:
; APPLICANT: ZymoGenetics, Inc.
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Best Local Similarity 100.
Matches 10; Conservative
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US-09-941-314-9
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                US-10-424-599-249999
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Fublication No. US20040031072A1
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: La Rosa Thomas J
APPLICANT: La Rosa Thomas J
APPLICANT: Cao Yongwei
TITLE OF INVENTION: Soy Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILLE REFERENCE: 38-21(5123.9)B
CURRENT FILING DATE: 2003-04-28
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 285684
SEQ ID NO 249999
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PRIOR APPLICATION NUMBER: 60/191, 078

PRIOR FILING DATE: 2000-03-21

PRIOR FILING DATE: 2000-03-21

PRIOR FILING DATE: 2000-05-26

PRIOR FILING DATE: 2000-05-26

PRIOR PELICATION NUMBER: 60/230, 335

PRIOR PLICATION NUMBER: 60/242, 578

PRIOR PLICATION NUMBER: 60/242, 578

PRIOR PLICATION NUMBER: 60/253, 625

PRIOR PLICATION NUMBER: 60/253, 625

PRIOR PLICATION NUMBER: 60/257, 931

PRIOR PLICATION NUMBER: 60/267, 636

PRIOR PLILING DATE: 2000-11-27

PRIOR PLILING DATE: 2001-02-09

PRIOR P
APPLICANT: Wall, Daniel
APPLICANT: Trawick, John
APPLICANT: Trawick, John
APPLICANT: Yamamoto, Robert
APPLICANT: You, H.
APPLICANT: Xu, H.
APPLICANT: Xu, H.
APPLICANT: EFFERENCE: ELITRA.034A
CURRENT APPLICATION UMBER: US/10/282,122A
CURRENT FILING DATE: 2003-02-20
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3; Mismatches
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29.9%; Score 56.5;
Best Local Similarity 46.2%; Pred. No. 33
Matches 12; Conservative 3; Mismatche
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LOCATION: (485)...(485)
CTHEN INDORMATION: X-any amino acid
US-10-282-122A-44483
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US-10-424-599-249999
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US-10-312-273-375
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TITLE OF INVENTION: Identification of Essential Genes in Microorganisms
FILE REFERENCE: ELITRA.034.0220
CURRENT APPLICATION NUMBER: US/10/282,122A
CURRENT PILING DATE: 2003-02-20
PRIOR FILING DATE: 2000-03-21
PRIOR PLING DATE: 2000-03-21
PRIOR PLING DATE: 2000-05-23
PRIOR PLING DATE: 2000-05-26
PRIOR PLING DATE: 2000-05-26
PRIOR PLING DATE: 2000-05-26
PRIOR PLING DATE: 2000-05-60
PRIOR PLING DATE: 2000-05-09
PRIOR PLING DATE: 2000-09-06
PRIOR PLING DATE: 2000-09-09
PRIOR PLING DATE: 2000-09-09
PRIOR PLING DATE: 2000-09-09
PRIOR PLING DATE: 2000-10-23
PRIOR PLING DATE: 2000-10-23
PRIOR PLING DATE: 2000-11-27
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TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
TITLE OP INVENTION: Inhibit Cancer Procoagulant Protein
FILE REPERENCE: 00-81PC
CURRENT APPLICATION NUMBER: 05/29/941,314
CURRENT APPLICATION NUMBER: 06/230,230
PRIOR PILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: PastSEQ for Windows Version 4.0
SEQ ID NO 8
LENGTH: 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 52.4%; Score 99; DB 9; Length 35; Best Local Similarity 100.0%; Pred. No. 2.7e-06; Matches 18; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 58157, Application US/10282122A
; Publication No. US20040029129A1
; GENERAL INFORMATION:
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FILING DATE: 2001-02-09
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APPLICATION NUMBER: 60/269,308
                                                                                                                        Sequence 8, Application US/09941314
Patent No. US20020142396Al
GENERAL INFORMATION:
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1 KDSLQWITDQYNKESDDK 18
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APPLICANT: Zamudio, Carlos
APPLICANT: Malone, Cheryl
APPLICANT: Haselbeck, Robert
APPLICANT: Ohlsen, Kari
APPLICANT: Zyskind, Judith
APPLICANT: Wall, Daniel
APPLICANT: Trawick, John
APPLICANT: Carr, Grant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Yamamoto, Robert
Forsyth, R.
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ORGANISM: Homo sapiens
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US-10-282-122A-58157
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PRIOR FILING DATE: 2001-02-16
Remaining Prior Application data removed - See File Wrapper or PALM.
NUMBER OF SEQ ID NOS: 78614
SOFTWARE: Patentin version 3.1
SEQ ID NO 58157
LENGTH: 430
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
30.4%; Score 57.5; DB 15;
Best Local Similarity 38.5%; Pred. No. 7;
Matches 15; Conservative 6; Mismatches 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 31.5%; Score 59.5; DB 12; Best Local Similarity 52.4%; Pred. No. 9.5; Matches 11; Conservative 6; Mismatches 3;
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169 LENYAQKEKLNWITDESNEDN 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14 VENYA-KDSLQWITDQYNKES 33
                                                                                                                                                                                                                                                             TYPE: PRT GRGANISM: Haemophilus influenzae US-10-282-122A-58157
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Haselbeck, Robert
Ohlsen, Kari
Zyskind, Judith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Wang, Liangsu
APPLICANT: Zamudio, Carlos
APPLICANT: Malone, Cheryl
APPLICANT: Haselbeck, Robert
APPLICANT: Ohlsen, Kari
APPLICANT: Zyskind, Judith
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SOFTWARE: FastSEQ for Windows Version 4.0
                                    SEQ ID NO 2
LENGTH: 137
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US-09-941-314-7
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                Sequence 3, Application US/09941314

Batent No. US20020142396A1

GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
FILE REFERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314

CURRENT FILING DATE: 2001-08-29

PRIOR PILING DATE: 2001-08-29

NUMBER OF SEQ ID NOS: 19

SEQ ID NO 3

SEQ ID NO 3

LENGTH: 115

TYPE: PRI

TYPE:
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; Patent No. US20020142396A1
; Patent No. US20020142396A1
; GENERAL INFORMATION:
; APPLICANT: ZymoGenetics, Inc.
; TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
; TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
; FILE REFERENCE: 00-81PC
; CURRENT APPLICATION NUMBER: US/09/941,314
; CURRENT FILING DATE: 2001-08-29
; PRIOR PILING DATE: 2001-09-01
; NUMBER OF SEQ ID NOS: 19
; SOFFWARE: FastSEQ for Windows Version 4.0
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Fatent No. US20020142396A1
GENERAL INFORMATION:
I TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
FILE REFERENCE: 200-81pC
CURRENT APPLICATION NUMBER: US/09/941,314
FRICH APPLICATION NUMBER: 60/230,230
FRIOR PAPLICATION NUMBER: 60/230,230
FRIOR PILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
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100.0%; Score 189; DB 9;
Best Local Similarity 100.0%; Pred. No. 6.7e-18;
Matches 36; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
100.0%; Score 189; DB 9;
Best Local Similarity 100.0%; Pred. No. 6.5e-18;
Matches 36; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 36
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; ORGANISM: Homo sapiens US-09-941-314-3
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ORGANISM: Homo sapiens
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LENGTH: 117
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US-09-941-314-2
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US-09-941-314-4
US-09-941-314-3
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                                                                                            Length 137;
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CURRENT THING DATE: 2001-08-29
PRIOR PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 5
LENGTH: 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 53.4%; Score 101; DB 9; Length 22; Best Local Similarity 100.0%; Pred. No. 8.8e-07; Matches 20; Conservative 0; Mismatches 0; Indel8
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Patent No. US20020142396A1

GENERAL INFORMATION:

APPLICANT: ZymcGenetics, Inc.

TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
FILE REFERENCE: 00-81PC

CURRENT APPLICATION NUMBER: US/09/941,314

CURRENT FILING DATE: 2001-08-29

PRIOR APPLICATION NUMBER: 60/230,230

PRIOR APPLICATION NUMBER: 60/230,230

NUMBER OF SEQ ID NOS: 19

SOFTWARE: FastSEQ for Windows Version 4.0

SEQ ID NO 7

LENGTH: 18
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                                                                                                                                            Indels
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Pred. No. 1.3e-06;
0; Mismatches 0;
                                                                                               Query Match 100.0%; Score 189; DB 9; Best Local Similarity 100.0%; Pred. No. 7.9e-18; Matches 36; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                         26 RKKTFLSVHEVMAVENYAKDSLOWITDOYNKESDDK 61
                                                                                                                                                                                              1 RKKTFLSVHEVMAVENYAKDSLOWITDQYNKESDDK 36
                                                                                                                                                                                                                                                                                                                                                                 Sequence 5, Application US/09941314
Patent No. US20020142396A1
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Conservative 0;
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TYPE: PRT
ORGANISM: Homo sapiens
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US-09-941-314-7
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Best Local Similarity
Matches 18; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
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APPLICANT: RAINE, DAVIG K.
APPLICANT: HARZAL, DAVIG K.
APPLICANT: Chen, Wensheng
TITLE OF INVENTION: HUMAN GENE EXPESSION NUCLEIC ACID PROBES USEFUL FOR
TITLE OF INVENTION: HUMAN GENE EXPESSION ANALYSIS BY MICROARRAY
TITLE OF INVENTION: HUMAN GENE EXPESSION ANALYSIS BY MICROARRAY
TITLE OF INVENTION: HUMBER: US/09/864,761
CURRENT APPLICATION NUMBER: US/09/864,761
CURRENT FILING DATE: 2000-02-04
FRIOR FILING DATE: 2000-02-04
FRIOR PELING DATE: 2000-02-04
FRIOR PELING DATE: 2000-03-04
FRIOR APPLICATION NUMBER: US 60/236,366
FRIOR APPLICATION NUMBER: US 60/236,359
FRIOR APPLICATION NUMBER: US 60/236,359
FRIOR PELING DATE: 2000-09-27
FRIOR PELING DATE: 2000-09-27
FRIOR APPLICATION NUMBER: PCT/US01/0066
FRIOR FILING DATE: 2001-01-30
FRIOR PELING DATE: 2001-01-30
FRIOR PELING DATE: 2001-01-30
FRIOR APPLICATION NUMBER: PCT/US01/0066
FRIOR PELING DATE: 2001-01-30
FRIOR PELING DATE: 2001-01-30
FRIOR PELING DATE: 2001-01-30
FRIOR PELING DATE: 2001-01-30
FRIOR APPLICATION NUMBER: PCT/US01/0066
FRIOR FILING DATE: 2001-01-30
FRIOR PELING DATE: 2001-01-30
FRIOR PERING DATE: 2001-01-30
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OTHER INFORMATION: MAP TO AL096677.18
OTHER INFORMATION: EXPRESSED IN BT474, SIGNAL = 0.96
OTHER INFORMATION: EST HUMAN HIT: A1200657.1, EVALUE 5.00e-23
OTHER INFORMATION: SWISSPROT HIT: 060676, EVALUE 1.00e-01
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PRIOR FILING DATE: 2001-01-30
PRIOR PILING DATE: 2001-01-30
PRIOR PLING DATE: 2001-01-30
PRIOR PLING DATE: 2001-01-30
PRIOR PLING DATE: 2001-01-30
PRIOR PLING DATE: 2000-03-31
PRIOR APPLICATION NUMBER: US 60/234,687
PRIOR APPLICATION NUMBER: US 60/234,687
PRIOR APPLICATION NUMBER: US 09/608,408
PRIOR PILING DATE: 2000-06-30
PRIOR PILING DATE: 2000-06-30
PRIOR APPLICATION NUMBER: US 09/774,203
PRIOR PILING DATE: 2001-01-29
NUMBER OF SEC 1D NOS: 49117
SOFTWARE: Annomax Sequence Listing Engine vers: 1.1
SEC ID NO 48336
                                                                                Sequence 48936, Application US/09864761
Patent No. US20020048763A1
GENERAL INFORMATION:
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ORGANISM: Homo sapiens
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PPLICANT: Chen, Wensheng
ITLE OF INVENTION: HUMAN GENOME-DERIVED SINGLE EXON NUCLEIC ACID PROBES USEFUL FOR
ITLE OF INVENTION: GENE EXPRESSION ANALYSIS BY MICROARRAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N: EXPRESSED IN BONE MARROW, SIGNAL = 1.5
N: EXPRESSED IN LUNG, SIGNAL = 1.5
N: EXPRESSED IN LUNG, SIGNAL = 1.8
N: EXPRESSED IN PLACENTA, SIGNAL = 1.7
N: EXPRESSED IN PLACENTA, SIGNAL = 1.7
N: EXPRESSED IN PETAL LIVER, SIGNAL = 1.3
N: EXPRESSED IN BT474, SIGNAL = 1.3
N: EXPRESSED IN HEART, SIGNAL = 1.3
N: EXPRESSED IN HEART, SIGNAL = 1.3
N: EXPRESSED IN HELA, SIGNAL = 1.3
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       : Annomax Sequence Listing Engine vers. 1.1
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100.0%; Pred. No. 2.6e-18;
iive 0; Mismatches 0;
                                                                                                               TILLE OF LINGENIES. GENE EATRESSION ANALISM.
CURRENT APPLICATION NUMBER: US/09/864,761
CURRENT FILING DATE: 2000-05-23
PRIOR PELLOTATION NUMBER: US 60/180,312
PRIOR PELLING DATE: 2000-02-04
PRIOR PELLING DATE: 2000-05-26
PRIOR PELLING DATE: 2000-06-26
PRIOR PELLING DATE: 2000-06-26
PRIOR PELLING DATE: 2000-06-36
PRIOR PELLING DATE: 2000-09-37
PRIOR PELLING DATE: 2000-10-04
PRIOR PELLING DATE: 2000-10-04
PRIOR PELLING DATE: 2000-10-04
PRIOR PELLING DATE: 2001-01-30
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SOFTWARE: Annomax Sequence 1
SEQ ID NO 34822
LENGTH: 50
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FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OTHER INFORMATION:
OTHER INFORMATION:
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OTHER INFORMATION:
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OTHER INFORMATION:
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Best Local S
Matches 36
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ö Gaps ö Indels Length 50; 100.0%; Score 189; DB 9; ilarity 100.0%; Pred. No. 2.6e-18; Conservative 0; Mismatches 0; 1 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 36 RKKTFLSVHEVMAVENYAKDSLOWITDOYNKESDDK 36 Best Local Similarity Matches 36; Conserv

RESULT 4

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Gaps

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Indels

1 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 36 RKKTFLSVHEVMAVENYAKDSLOWITDOYNKESDDK 36

Conservative

Local Similarity nes 36; Conserv

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March 18, 2004, 14:15:06; Search time 21.7857 Seconds (without alignments) 427.913 Million cell updates/sec
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1: /cgn2_6/ptodata/2/pubpaa/US07_PUBCOMB.pep:*

2: /cgn2_6/ptodata/2/pubpaa/PUS07_NEW_PUB.pep:*

3: /cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep:*

4: /cgn2_6/ptodata/2/pubpaa/US06_PUBCOMB.pep:*

5: /cgn2_6/ptodata/2/pubpaa/US07_NEW_PUB.pep:*

6: /cgn2_6/ptodata/2/pubpaa/US08_NEW_PUB.pep:*

7: /cgn2_6/ptodata/2/pubpaa/US08_NEW_PUB.pep:*

8: /cgn2_6/ptodata/2/pubpaa/US08_NEW_PUB.pep:*

9: /cgn2_6/ptodata/2/pubpaa/US08_PUBCOMB.pep:*
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Ptodata/2/pubpaa/US09G_PUBCOMB.pep:*
Ptodata/2/pubpaa/US09_NEW_PUB.pep:*
Ptodata/2/pubpaa/US10B_PUBCOMB.pep:*
Ptodata/2/pubpaa/US10B_PUBCOMB.pep:*
Ptodata/2/pubpaa/US10G_PUBCOMB.pep:*
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GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                1 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1049977 segs, 258955339 residues
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Maximum Match 100%
Listing first 45 summaries
                                                                                                                   OM protein - protein search, using sw model
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Gapop 10.0 , Gapext 0.5
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Maximum DB seq length: 200000000
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189
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Perfect score:
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					SUMMARIES	
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No.	Score	Match	Match Length DB	DB	ΙD	Description
-	189	100.0	36	. 6	US-09-941-314-6	Seguence 6, Appli
7	189	100.0	20	σ	US-09-864-761-34822	Sequence 34822, A
m	189	100.0	20	o	US-09-864-761-48936	Sequence 48936, A
4	189	100.0	115	σ	US-09-941-314-3	Sequence 3, Appli
2	189	100.0	117	6	US-09-941-314-4	Sequence 4, Appli
9	189	100.0	137	σ	US-09-941-314-2	Sequence 2, Appli
7	101	53.4	22	σ	US-09-941-314-5	'n
Φ	66	52.4	18	σ	US-09-941-314-7	7
9	66	52.4	35	σ	US-09-941-314-8	ω,
10	59.5	31.5	430	12	US-10-282-122A-58157	Seguence 58157, A
11	57.5	30.4		15	US-10-312-273-375	Sequence 375, App
12	56.5	29.9	579	12	US-10-282-122A-44483	Sequence 44483, A
13	55.5	29.4	131	12	US-10-424-599-249999	Sequence 249999,
14	55	29.1	27	σ	US-09-941-314-9	Sequence 9, Appli
15	55	29.1	49	σ	US-09-941-314-13	Sequence 13, Appl

Sequence 34822, Application US/09864761
Patent No. US20020048763A1
GENERAL INFORMATION:
APPLICANT: Penn, Sharron G.
APPLICANT: Rank, David R.
APPLICANT: Hanzel, David K.

Sequence 261063,	Seguence 180261,	Sequence 275467,	Sequence 56041, A	Seguence 275468,	Sequence 57763, A		Sequence 46564, A	Sequence 616, App				Sequence 72616, A						Sequence 178326,			Sequence 62, Appl	Sequence 50269, A	Sequence 45567, A	Sequence 58446, A		Sequence 1.78322,	Sequence 2949, Ap		Sequence 10627, A
US-10-424-599-261063	US-10-424-599-180261	US-10-424-599-275467	US-10-425-114-56041	US-10-424-599-275468	US-10-425-114-57763	US-10-282-122A-71993	US-10-425-114-46564	US-10-289-762-616	US-10-424-599-275473	US-10-425-114-45919	US-10-282-122A-56583	US-10-282-122A-72616	US-10-425-114-64859	US-10-425-114-60692	US-10-282-122A-75679	US-10-425-114-72398	US-10-424-599-259133	US-10-424-599-178326	US-10-282-122A-64245	US-10-282-122A-77973	US-10-320-800-62	US-10-282-122A-50269	US-10-425-114-45567	US-10-425-114-58446	US-10-424-599-178328	US-10-424-599-178322	US-10-104-047-2949	US-10-282-122A-57562	US-09-815-242-10627
12	12	12	12	12	12	12	12	15	12	12	12	12	12	12	12	12	12	12	12	12	15	12	12	12	12	12	15	12	σ
252	260	186	369	486	507	239	684	195	489	494	240	278	282	384	418	81	159	699	1818	460	430	469	512	626	699	781	1166	1175	1208
29.1	29.1	28.8	28.8	28.8	28.8	28.6	28.6	28.3	28.3	28.3	28.0	27.2	27.2	27.2	27.2	27.0	27.0	27.0	27.0	26.7	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	
55	55	54.5	54.5	54.5	54.5	54	54	53.5	53.5	53.5	53	51,5	51.5	51.5	51.5	51	51	21	51	50.5	20	20	20	20	20	20	20	20	20
16	17	18	19	20	21	22	23	24	25	56	27	58	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45

ALIGNMENTS

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US-09-941-314-6

US-09-941-314-6

Sequence 6, Application US/09941314

Sequence 6, Application US/09941314

Sequence 6, Application US/09941314

GENERAL INFORMATION:

APPLICANT: ZonGenetics, Inc.

TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein

FILE OF INVENTION: Inhibit Cancer Procoagulant Protein

FILE OF INVENTION NUMBER: US/09/941,314

CURRENT APPLICATION NUMBER: US/09/941,314

CURRENT FILING DATE: Z001-09-01

NUMBER OF SEQ ID NOS: 19

NUMBER OF SEQ ID NOS: 19

SEQ ID NO 6

LENGTH: 36

TYPE PRT

ORCANISM: Homo sapiens

US-09-941-314-6

Query Match

Best Local Similarity 100.0%; Score 189; DB 9; Length 36; Best Local Similarity 100.0%; Pred. No. 1.8e-18; Matches 36; Conservative 0; Mismatches 0; Indels 0; Gaps

QY

RESULT 2

US-09-864-761-34822
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Gaps

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Length 403; Indels

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C;Accession: Ã04486
R;Horinouchi, S.; Weisblum, B.
J Bacteriol. 150, 804-814, 1982
A;Title: Nucleotide sequence and functional map of pE194, a plasmid that specifies inducial A;Reference number: A91790; MUD:82167187; PMID:6279574
A;Mocossion: A04486
A;Molecule type: DNA
A;Residues: 1-403 < HOR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cyberies are protein T25B24.14 [imported] - Arabidopsis thaliana hypothetical protein T25B24.14 [imported] - Arabidopsis thaliana (mouse-ear cress)
C;Becies: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 31-Mar-2001
C;Accession: C96640
C;Beciesion: C96640
C;Becies: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 31-Mar-2001
C;Accession: C9640
C;Becies: 02-Mar-2001
C;Arcession: C9640
A;Authors: Hunter, J.E.; Publes, D.; Conway, A.B.; Conway, A.R.; Creasy, T.H.; Dewar, K.; Anthors: Hunter, J.E.; Jenkins, J.; Johnson-Hopson, C.; Khan, S.; Khaykin, E.; Kim, C.; C.A.; Li, J.H.; Li, Y.; Liu, S.X.; Liu, Z.A.; Luros, J.S.; Maiti, R.; Marziali, Rizzo, M.; Rouley, D.; Sakano, H.; Suin, H.; Tallon, I. A;Authors: Salzberg, S.L.; Schwartz, J.R.; Shinn, P.; Southwick, A.M.; Sun, H.; Tallon, I. A;Attles: Sequence and analysis of chromosome 1 of the plant Arabidopsis.
A;Accession: C96640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Cross-references: GB:AE005173; NID:g4585884; PIDN:AAD25557.1; GSPDB:GN00141
C;Genetics:
                                     _pothetical protein C-403 - Staphylococcus aureus plasmid pE194
;Species: Staphylococcus aureus
;Date: 18-Aug-1982 #sequence_revision 05-Apr-1983 #text_change 30-Sep-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               329 KKWIKIVTSTWALHNYIRDSQQEDSDFRHWEIVESYEQHGDE 370
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 52; DB 2;
Pred. No. 34;
5; Mismatches 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 53; DB 1;
Pred. No. 25;
8; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Genome: plasmid
C;Superfamily: probable site-specific recombinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Search completed: March 18, 2004, 14:23:14 Job time: 7.92857 secs
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100 IERFFKDSLEFLENBYGKEN 119
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 28.0%;
Best Local Similarity 40.0%;
Matches 8; Conservative
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Best Local Similarity 33.3
Matches 14; Conservative
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A,Molecule type: DNA
A,Residues: 1-404 <STO>
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A,Map position: 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             probable transcription regulator sdiA - Bscherichia coli (strain K-12)
NyAlternate names: trans-acting factor sdiA
CiSpeciaes: Bscherichia coli
CiSpeciaes: Bscherichia coli
CiSpeciaes: Bscherichia coli
CiAccession: A64955; A24964
R;Blattner, P.R.; Plunket III, G.; Bloch, C.A.; Perna, N.T.; Burland, V.; Riley, M.; Cc
A; Rose, D.J.; Mau, B.; Shao, Y.
Science 277, 1453-1462, 197
A;Title: The complete genome sequence of Escherichia coli K-12.
A;Rose, D.J.; Mau, B.; Shao, Y.
A;Rose inumber: A64955
A;Accession: A64954
A;Residues: 1-240 calLAT>
A;Residues: 1-
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A; Residues: 1-119, 'HSYPNAAOTG',129-139,'R',141-240 <SHA>
A; Cross-reneces: GB:X03691; GB:X0189; GB:X00638; NID:g43287; PIDN:CAA27327.1; PID:g4
A; Cross-reneces: GB:X03691; GB:X0189; GB:X00638; NID:g43287; PIDN:CAA27327.1; PID:g4
R; Wang, X.; de Boer, P.A.J.; Rothfield, L.I.
EMBO J. 10, 3363-3372, 1991
EMBO J. 10, 3363-3372, 1991
A; Title: A factor that positively regulates cell division by activating transcription of
A; Reference number: S17790; MUID:92007787; PMID:1915297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A Description: suppresses cell division inhibitors A, Description: suppresses specifically transcription of the ftsQAZ gene cluster, resulting in an C;Superfamily: sdia regulatory protein C;Superfamily: sdia regulatory protein regulation C;Keywords: DNA binding; transcription regulation
                                                                                                                                                            A,Molecule type: DNA
A,Residues: 1-205 <IIN-
A,Cross-references: EMBL:AF067608; PIDN:AAC17648.1; GSPDB:GN00019; CESP:B0511.9
A,Experimental source: strain Bristol N2; clone B0511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
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                                                                                                                                                                                                                                                                                                                                                                                                  A;Map position: 1
A;Introns: 69/1; 88/3; 99/3; 184/1
C;Superfamily: Caenorhabditis elegans hypothetical protein B0511.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28.0%; Score 53; DB 1; Length 240; 31.0%; Pred. No. 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 205
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
A,Description: The sequence of C. elegans cosmid B0511.
A,Reference number: Z21285
A,Accession: T33117
A,Status; preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28.0%; Score 53; DB 2;
61.5%; Pred. No. 11;
tive 3; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity 31.0 Matches 9; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    :| :||:||| ||
15 EDDIQWLTDQLNK 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8; Conservative
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                                                                                                                                                                                                                                                                                                                                                         A; Gene: CESP: B0511.9
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Gaps

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RESULT 14

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Score 55; DB 2; Pred. No. 11; 9; Mismatches

29.1%;

Local Similarity 35.5 Les 11; Conservative

Query Match

A; Map position: circular chromosome

A; Gene: Atu2280

2 KKTFLSVHEVMAVEN-----YAKDSLQWIT 26 :::||:| : | | | ERSFLTVEWLSAPENRLPIGRYAKEAIDWLT 85

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A; Description: involved in protein folding and assembling/disassembling of protein comple C; Superfamily: heat shock protein 70 C; Keywords: ATP; molecular chaperone
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R;Serwe, M.; Meyer, H.E.; Craig, A.G.; Carlhoff, D.; d'Haese, J.
Bur. J. Biochem. 211, 341-346, 1993
A;Title: Complete amino acid sequence of the regulatory light chain of obliquely striatec A;Reference number: S28845; MUID:93145966; PMID:8425543
A;Accession: S28845
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C;Species: Lumbricus terrestris (common earthworm)
C;Date: 19-Mar-1997 #sequence_revision 19-Mar-1997 #text_change 18-Jun-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ;Cross-references: EMBL:U58209; NID:g1575129; PIDN:AAC49900.1; PID:g1575130
                                                                                                                                                                                                                                                                                                     diak-type molecular chaperone cBiPe3 - maize

NyAlternate names: lumenal binding protein cBiPe3
Cispecies: Zea mays (maize)
Cispecies: Za-Apr.1999 #sequence_revision 23-Apr-1999 #text_change 11-May-2000
Cipate: Z3-Apr.1999 #sequence_revision X.S.
Riwrobel, R.L.; OBrian, G.R.; Boston, R.S.
Apr.11c: Comparative analysis of BiP gene expression in maize endosperm.
Aprile: Comparative analysis of BiP gene expression in maize endosperm.
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CiDate: 29-Oct-1999 #sequence_revision 29-Oct-1999 #text_change 09-Jun-2000
C;Accession: T33117
RiJin-Wollam, A.; Sutterer, C.; Ozersky, P.
submitted to the EMBL Data Library, May 1998
                                   Gapa
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                               Indels
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A,Molecule type: protein
A,Residues: 1-195 <SER>
C,Superfamily: calmodulin; calmodulin repeat homology
C,Keywords: EF hand
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 hypothetical protein B0511.9 - Caenorhabditis elegans C; Species: Caenorhabditis elegans
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 7
                                                                                                                                         C; Keywords: EF hand F: SS-87/Domain: calmodulin repeat homology <math>< EF1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 28.6%; Score 54; DB Best Local Similarity 33.3%; Pred. No. 32; Matches 10; Conservative 6; Mismatches
   Local Similarity 33.3%; Pred. No. 32; les 10; Conservative 6; Mismatches
                                                                                            6 LSVHEVMAVENYAKDSLQWITDQYNKESDD 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6 LSVHEVMAVENYAKDSLQWITDQYNKESDD 35
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Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Status: translated from GB/EMBL/DDBJ
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28.0%;
Best Local Similarity 52.6%;
Matches 10; Conservative
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A; Residues: 1-663 < WRO>
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      Best Loc
Matches
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T33117
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             dnaK-type molecular chaperone - maize (fragment)
N;Alternate names: heat shock protein 70 homolog; immunoglobulin-binding protein homolog
C;Species: Zea mays (maize)
C;Date: 30-Sep-1991 #sequence_revision 10-Mar-1994 #text_change 13-Mar-1998
C;Accession: JQ0966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RiFontes, E.B.P.; Shank, B.B.; Wrobel, R.L.; Moose, S.P.; OBrian, G.R.; Wurtzel, E.T.; Elbant Cell 3, 483-496, 1991
A;Title: Characterization of an immunoglobulin binding protein homolog in the maize flou A;Reference number: JQ0966; MUID:93005712; PMID:1840923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A, Description: involved in protein folding and assembling/disassembling of protein complete. S. Superfamily: heat shock protein 70 C; Superfamily: heat shock protein 70 C; Keywords: ATP, endoplasmic reticulum; molecular chaperone F; 464-467/Region: endoplasmic reticulum retention signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Description: involved in protein folding and assembling/disassembling of protein compl
C;Superfamily: heat shock protein 70
C;Keywords: ATP; molecular chaperone
A;Title: The Genome of the Natural Genetic Engineer Agrobacterium tumefaciens CS8.
A;Reference number: AB2577; MUID:21608550; PMID:11743193
                                                                                                                                                                                                                                                                                                                                                                                                                                       1;
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                                                   A, Accession: AG2856
A, Status: preliminary
A, Molecule type: DNA
A, Residues: 1-343 <KUR>
A, Cross-references: GB: AE008688; PIDN: AAL43269.1; PID: g17740756; GSPDB: GN00186
A, Experimental source: strain C58 (Dupont)
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A;Residues: 1-663 <WRO>
A;Cross-references: EMBL:U58208; NID:g1575127; PIDN:AAC49899.1; PID:g1575128
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C;Date: 23-Apr-1999 #text_change 11-May-2000
C;Date: 23-Apr-1999 #sequence_revision 23-Apr-1999 #text_change 11-May-2000
C;Accession: T04078
E;Wrobel, R.L.; OBrian, G.R.; Boston, R.S.
Gene 204, 105-113, 1997
A;Title: Comparative analysis of BiP gene expression in maize endosperm.
A;Reference number: Z15191; MUID:98094260; PMID:9434171
                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
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                                                                                                                                                                                                                                                                                                                                                                           Length 343;
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A, Experimental source: strain fl2 C, Function:

A; Molecule type: mRNA A; Residues: 1-467 <FON> A; Accession: JQ0966

dnaK-type molecular chaperone cBiPe2 - maize N;Alternate names: lumenal binding protein cBiPe2

A;Status: translated from GB/EMBL/DDBJ

Query Match

396 LEAEEKEKVEEALKEALEWLDDNOSAEKED 425 LSVHEVMAVENYAKDSLQWITDQYNKESDD 35

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R;Shirai, M.; Hirakawa, H.; Kimoto, M.; Tabuchi, M.; Kishi, P.; Ouchi, K.; Shiba, T.; Ish Nucleic Acids Res. 28, 2311-2314, 2000
Nucleic Acids Res. 28, 2311-2314, 2000
A;Title: Comparison of whole genome sequences of chlamydia pneumoniae J138.
A;Reference number: A86491; MUID:20330349; PMID:10871362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C; Species: Agrobacterium tumefaciens
C; Date: 11-Jan-2002 #sequence_revision 11-Jan-2002 #text_change 18-Nov-2002
C; Date: 11-Jan-2002 #sequence_revision 11-Jan-2002 #text_change 18-Nov-2002
C; Accession: AGS56
R; Wood, D.W.; Setubal, J.C.; Kaul, R.; Monks, D.; Chen, L.; Wood, G.E.; Chen, Y.; Woo, Lerage, G.; Gillet, W.; Grant, C.; Guenthner, D.; Kutyavin, T.; Levy, R.; Li, M.; McClelle Karp, P.; Romero, P.; Zhang, S.
Science 294, 2317-2323, 2001
A; Athuthors: Yoo, H.; Tao, Y.; Biddle, P.; Jung, M.; Krespan, W.; Perry, M.; Gordon-Kamm, Ester, E.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              hypothetical protein Atu2280 [imported] - Agrobacterium tumefaciens (strain C58, Dupont)
                                                                                                                                                                       hypothetical protein CPj0574 [imported] - Chlamydophila pneumoniae (strain J138)
C;Species: Chlamydophila pneumoniae, Chlamydia pneumoniae
C;Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 02-Mar-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Residues: 1-209 <WIL>
A;Cross-references: EMBL:Z81063; PIDN:CAB02955.1; GSPDB:GN00019; CESP:F15D3.6
A;Experimental source: clone F15D3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Cross-references: GB:BA000008; NID:g8978945; PIDN:BAA98780.1; GSPDB:GN00142
A;Experimental source: strain J138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   hypothetical protein F15D3.6 - Caenorhabditis elegans
C:Species: Caenorhabditis elegans
C:Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 15-Oct-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gape
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 RKKTFLSVHEVMAVENYAKD-----SLQWITDQYNKE 32
26 RKKTFLSSHRVLARPSFPVDYCPGKIYDLQBIYEELNAQ 64
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A;Molecule type: DNA
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Pred. No. 4.6;
7; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R,White, S.
submitted to the EMBL Data Library, October 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 KKTFLSVHEVMAVENYAKDSLQWITDQYNKE 32
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A; Introns: 11/2; 66/3; 95/3; 153/3; 175/3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 30.4%;
Best Local Similarity 38.5%;
Matches 15; Conservative
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Best Local Similarity 35.5%;
Matches 11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Reference number: Z19353
A;Accession: T20975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Residues: 1-184 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                    A, Status: preliminary A, Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A, Gene: CESP: F15D3.6
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                                                                                                                                                                                                                                                                                      hypothetical protein sdiA [imported] - Escherichia coli (strain O157:H7, substrain EDL93 C; Species: Escherichia coli C; Species: Escherichia coli C; Date: 16-Feb-2001 #sequence_revision 16-Feb-2001 #text_change 14-Sep-2001 C; Accession: GBS808 R; Perna, N.T.; Plunkett III, G.; Burland, V.; Mau, B.; Glasner, J.D.; Rose, D.J.; Mayhew Iller, L.; Grotbeck, E.J.; Davis, N.W.; Lim, A.; Dimalanta, E.; Potamousis, K.; Apodaca, Nature 409, 529-533, 2001 A; Fitle: Genome sequence of enterohemorrhagic Escherichia coli O157:H7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Status: preliminary
A;Residue: preliminary
A;Residues: 1-184 cARN>
A;Residues: 1-184 cARN>
A;Residues: 1-184 cARN>
A;Cross-references: GB:AE001642; GB:AE001363; NID:g4376865; PIDN:AAD18714.1; PID:g437686
A;Experimental source: strain CWL029
B;Read, T.D.; Brunham, R.C.; Shen, C.; Gill, S.R.; Heidelberg, J.F.; White, O.; Hickey, C.; Dodson, R.; Gwinn, M.; Nelson, W.; DeBoy, R.; Kolonay, J.; McClarty, G.; Salzberg, Nucleic Agnome sequences of Chlamydia trachomatis MoPn and Chlamydia pneumoniae AR39.
A;Reference number: A81500; MUID:20150255; PMID:10684935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Residues: 1-240 <STO>
A;Cross-references: GB:AE005174; NID:g12516014; PIDN:AAG56931.1; GSPDB:GN00145; UWGP.Z3d
A;Experimental source: strain O157:H7, substrain EDL933
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A;Cross-references: GB:AE002178; GB:AE002161; NID:g7189099; PIDN:AAF38049.1; PID:g718910
A;Experimental source: strain AR39, HL cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1;
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                                  Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30.7%; Score 58; DB 2; Length 240; 34.5%; Pred. No. 2.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11; Indels
                                     11; Indels
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      Pred. No. 2.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8; Mismatches
                                     8; Mismatches
                                                                                                                               74 KNFLAIDPVLNPENFSQCHLAWNDDLFNE 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | | | | : : | : | | : | | : | | | : | KNFLAIDPVLNPENFSQGHLMWNDDLFNE 102
                                                                                         3 KTFLSVHEVMAVENYAKDSLQWITDQYNK 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3 KTFLSVHEVMAVENYAKDSLOWITDQYNK 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C,Genetics:
A,Gene: sdiA
C,Superfamily: sdiA regulatory protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10; Conservative
      34.5%;
   Best Local Similarity 34.5
Matches 10; Conservative
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Best Local Similarity
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A;Gene: CPn0574; CP0175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity
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A;Status: preliminary
A,Molecule type: DNA
A;Residues: 1-184 <REJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A,Accession: G85808
A,Status: preliminary
A,Molecule type: DNA
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Matches

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GenCore version 5.1.6
(c) 1993 - 2004 Compugen Ltd.
                  Copyright
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 protein search, using sw model OM protein

Run on:

March 18, 2004, 14:06:15; Search time 6.92857 Seconds (without alignments) 499.799 Million cell updates/sec

US-09-941-314-6 189 1 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 36 Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

283366 segs, 96191526 residues Searched:

283366 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

summaries Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 su

Database

PIR 78:*
1: pirl:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Description	_	_	_	_	_		_	_	dnaK-type molecula	dnaK-type molecula	myosin regulatory	hypothetical prote	probable transcrip	hypothetical prote		_	Ε	unknown protein en	hypothetical prote	glutamyl-tRNA redu	glutamyl-tRNA redu	hypothetical prote		Н	۲ì	М	dnaK-type molecula	dnaK-type molecula	probable N5,N10-me
ΔΙ	D64151	F90960	G85808	D72061	B86562	T20975	AG2856	JQ0966	T04078	T04080	S28845	T33117	QQECU1	QQSA4E	C96640	T05439	T18404	C85517	99906Н	BVEBHA	AC0720	A81419	B69166	A48439	F97008	S21877	S21878	S21881	T45226
DB	~	~	~	~	~	~	7	~	~	~	N	N	ч	~	~	~	~	0	~	-	~	N	N	7	~	7	~	~	7
Length	430	240	240	184	184	209	343	467	663	663	195	205	240	403	404	457	1422	318	318	418	418	465	567	959	190	9	292	g	N
% Query Match	1.5	7.0	0.7	4.0	4.0	9.6	7.	9.6					8.0	•			٠	7.2	•	•	٠	7.2	٠	٠		•	7.0	٠	
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Score	59.5	28	58	57.5	57.5	26	22	54	54	54	53	53	53	53	52	22	52	51.5	51.5	51.5	51.5		51.5	51.5	51	51	51	51	51
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hypothetical prote	probable two-compo	probable membrane	probable L-asparag	dnaK-type molecula	dnaK-type molecula	dnaK-type molecula	dnaK-type molecula	hypothetical prote	conserved hypothet	hypothetical prote	conserved hypothet	hypothetical prote	conserved hypothet	conserved hypothet	protein F10A5.13 [
C72356	B81413	867559	B71021	T06358	S21879	S21880	T46574	873852	AE0130	T32757	H71292	T31542	A81790	A81214	E96786
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360	414	420	438	999	667	668	668	1818	460	732	252	302	430	430	525
27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	26.7	26.7	26.5	26.5	26.5	26.5	26.5
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51	51	Ľ							ŭ	š					

ALIGNMENTS

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C;Species: Haemophilus influenzae
C;Date: 18-Aug-1995 #sequence_revision 18-Aug-1995 #text_change 09-Dec-2002
C;Accession: D64151
hypothetical protein HI0404 - Haemophilus influenzae (strain Rd KW20)
                             , i
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Virtuesselum, Ed.12. Addms, M.D.; White, O.; Clayton, R.A.; Kirkness, E.F.; Kerlavage, A.; Gocayne, J.D.; Scott, J.; Shirley, R.; Liu, L.I.; Glodek, A.; Kelley, J.M.; Weidman, J. D.M.; Brandon, R.C.; Fine, L.D.; Fritchman, J.L.; Geoghagen, N.S.M.; Science 269, 496-512, 1995
A.Authors: Gnehm, C.L.; McDonald, L.A.; Small, K.V.; Fraser, C.M.; Smith, H.O.; Venter, A.; Aittle: Whole-genome random sequencing and assembly of Haemophilus influenzae Rd. A; Reference number: A64000; MUID:95350630; PMID:7542800
A.Accession: D64151
A, Status: nucleic acid sequence not shown; translation not shown
A, Molecule type: DNA
A, Residues: 1-430 <-TIGRS
A, Cross-references: GB:U32723; GB:L42023; NID:g1573363; PIDN:AAC22063.1; PID:g1573375; TJ
A, Note: best homolog was a hypothetical protein from Bacillus subtilis
C; Superfamily: Cell cycle protein MesJ

Gaps 1; Query Match
31.5%; Score 59.5; DB 2; Length 430;
Best Local Similarity 52.4%; Pred. No. 3.6;
Matches 11; Conservative 6; Mismatches 3; Indels

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169 LENYAQKEKLNWITDESNEDN 189 14 VENYA-KDSLOWITDQYNKES 33 ð a

RESULT 2

hypotherical protein ECG2654 [imported] - Escherichia coli (strain O157:H7, substrain RIN CiSpecies: Escherichia coli (Species: Escherichia coli (CiSpecies: Escherichia coli (CiSpecies: Escherichia coli (CiSpecies: 18-Jul-2001 #sequence_revision 18-Jul-2001 #text_change 03-Aug-2001 C;Accession; F90960 T; Kuhara, K.; Kurokawa, K.; Ishii, K.; Yokoyama, K.; Han, C.G., DNA Res. 8, 11-22, 2001 H. Changawara, N.; Yasunaga, T.; Kuhara, S.; Shiba, T.; Hattori, M.; Shinagawa, H. DNA Res. 8, 11-22, 2001 H. Change esquence of enterohemorrhagic Escherichia coli 0157:H7 and genom A;Reference number: A99629; MUID:21156231; PMID:11258796 A;Accession: F90960 A;Status: preliminary A;Nesidues: 1-240 <HAY>

A,Cross-references: GB:BA000007; PIDN:BAB36077.1; PID:g13362122; GSPDB:GN00154 A;Experimental source: strain O157:H7, substrain RIMD 0509952

C,Genetics: A,Gene: ECs2654 C,Superfamily: sdiA regulatory protein

Query Match

30.7%; Score 58; DB 2; Length 240;

5 FLSVHEVMAVBNYAKDSLQMITDQYNKESDDK 36 | : | | | : : | | : | | | 392 FQATHPVMDLKAFPKDNMLWVEWTIPRESVKK 423

Search completed: March 18, 2004, 14:25:35 Job time: 9.21429 secs

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Gaps

4.

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Sequence 5, Application US/08599455B

Sequence 5, Application US/08599455B

BENERAL INFORMATION:
APPLICANT: Tartaglia, Louis A.
APPLICANT: Tartaglia, Louis A.
APPLICANT: Tartaglia, Louis A.
TITLE OF INVENTION: METHODS OF IDENTIFYING COMPOUNDS THAT
TITLE OF INVENTION: MODULATE BODY WEIGHT USING THE OB RECEPTOR
NUMBER OF SEQUENCES: 44
CORRESPONDENCE ADDRESS:
ADDRESSEB: Fish & Richardson, P.C.
STREET: 225 Franklin Street
CORRESPONDENCE ADDRESS:
CONTROLL OF THE OBSTON CONTROLL OF T
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Pred. No. 56;
8; Mismatches 14; Indels
                                                                                                                                                                                                                                                                               Score 49; DB 3; Length 484;
Pred. No. 55;
9; Mismatches 15; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      297 KEEFIKIFDEKRLSKSPAFFDKQKLAWVNNQYMKQKD 333
                                                                                                                                                                                                                                                                                                                                                                                                                             2 KKTFLSVHEVMAVEN----YAKDSLQWITDQYNKESD 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY: US
ZIP: 02110-2804
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: Windows95
SOFTWARE: Fast-SEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/599,455B
FILING DATE: 22-JAN-1996
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/570,142
FILING DATE: 28-DEC-1995
APPLICATION NUMBER: 08/570,142
FILING DATE: 11-DEC-1995
APPLICATION NUMBER: 08/56,652
FILING DATE: 08-DEC-1995
APPLICATION NUMBER: 08/56,663
FILING DATE: 04-DEC-1995
APPLICATION NUMBER: 08/56,663
FILING DATE: 27-NOV-1995
APPLICATION NUMBER: 08/56,663
FILING DATE: 27-NOV-1995
APPLICATION NUMBER: 08/56,663
APPLICATION NUMBER: 08/56,663
APPLICATION NUMBER: 08/56,663
APPLICATION DATE: 27-NOV-1995
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APPLICATION DATE: 27-NOV-1995
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REFERENCE/DOCKET NUMBER: 07334/017001
TELECOMMULCATION INFORMATION:
TELEPHONE: 617-542-5070
TELEFAX: 617-542-6906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: Meiklejohn, Ph.D., Anita L.
                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 24.3%;
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 25.9%;
Best Local Similarity 31.2%;
Matches 10; Conservative
                                ; LENGTH: 484 amino acids
; TYPE: amino acid
STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
US-08-785-427-2
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amino acid
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INFORMATION FOR SEQ ID NO:
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   SEQUENCE CHARACTERISTICS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-599-455B-5
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Pred. No. 55;
9; Mismatches 15; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Hodgson, John
APPLICANT: Hodgson, John
TITLE OF INVENTION: No. 6238900el tRNA synthetase
TUTLE OF INVENTION: No. 6238900el tRNA synthetase
CORRESPONDENCES: 2
CORRESPONDENCE ADDRESS:
ADDRESSES: SmithKline Beecham Corporation
STREET: 709 Swedeland Road
CITY: King of Prussia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    297 KEEFIKIFDEKRISKSPAFFDKOKLAWVNNOYMKOKD 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KKTFLSVHEVMAVEN----YAKDSLQWITDQYNKESD 34
                         OPERATING SYSTEM: ODS
SOFTWARE: FastSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/913,578
FILING DATE: 17-JAN-1997
CLASSIFCATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 9601069.9
FILING DATE: 19-JAN-1996
ATTORNEY, AGENT INFORMATION:
NAME: Gimmi, Edward R
REGISTRATION NUMBER: 38,891
REPRERENCE/DOCKET NUMBER: P31352
TELECOMMUNICATION:
TELEPHONE: 610-270-4478
TELEFRAX: 610-270-5090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY: FUSA
ZIP: 19406-0939
COMPUTER READBLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FASTSEM: DOS
SOFTWARE: PASTSEM: DOS
SOFTWARE: 17-JAN-1997
FILING DATE: 17-JAN-1997
FILING DATE: 19-JAN-1997
FILING DATE: 19-JAN-1997
FILING DATE: 19-JAN-1997
APPLICATION NUMBER: 9601069.9
FILING DATE: 19-JAN-1996
ATTORNEY, AGENT INFORMATION:
NAME: GAMMI, ECWART R
REGISTRATION NUMBER: 38,891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P31352
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Patent No. 6238900
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER: P3
IELECOMMUNICATION INFORMATION:
TELEPHONE: 610-270-4478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 25.9%;
Best Local Similarity 24.3%;
Matches 9; Conservative
IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INFORMATION FOR SEQ ID NO: 2
SEQUENCE CHARACTERISTICS:
LENGTH: 484 amino acids
TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEFAX: 610-270-5090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGY: linear
MOLECULE TYPE: peptide
US-08-913-578-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STATE: PA
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GENERAL INFORMATION:
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GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION: Methods For Identifying Pathogenic Markers In A Sample OF TITLE OF INVENTION:
NUMBER OF SEQUENCES: 4
CORRESPONDENCE ADDRESS:
ADDRESSEE: Fullbright & Jaworski LLP
STREET: 666 Fifth Avenue
CITY: New York City
STATE: New York
ZIP: 10103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7
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Patent No. 6218159
GENERAL INFORMATION:
APPLICANT: Hodgson, John
APPLICANT: Lawlor, Elizabeth
TITLE OF INVENTION: No. 6218159el tRNA synthetase
NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
ADDRESSEE: SmithKline Beecham Corporation
STREET: 709 Swedeland Road
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.5 inch, 144 kb storage
COMPUTER: IBM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   636 LNVYEIKVNKLELELES-AKQKFGEITDTYQKEIEDK 671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6 LSVHEV-----MAVENYAKDSLQWITDQYNKESDDK 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 26.2%; Score 49.5; DB 3; Best Local Similarity 37.8%; Pred. No. 1.1e+02; Matches 14; Conservative 7; Mismatches 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER: IBM
COMPUTER: IBM
OPERATING SYSTEM: PC-DOS
SOFTWARE: Wordperfect
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/104,324B
FILING DATE: 25-June-1998
CLASSIFICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: 08/892,702
FILING DATE: 15-July-1997
ATTORNEY/AGENT INFORMATION:
NAME: Hanson, No. 6232466man D.
REGISTRATION NUMBER: 30,946
REFERENCE/DOCKET NUMBER: 30,946
REFERENCE/DOCKET NUMBER: 10D 5491
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELEFAN: (212) 318-3000
TELEFAN: (212) 752-5958
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 976 amino acids
                                                                                                                          Sequence 4, Application US/09104324B Patent No. 6232460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CITY: King of Prussia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ZIP: 19406-0939
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY: linear
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                                                                                                    US-09-104-324B-4
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APPLICANT: Griffais, R.
TITLE OF INVENTION: Chlamydia pneumoniae genomic sequence and polypeptides, fragmente
TITLE OF INVENTION: thereof and uses thereof, in particular for the diagnosis, preve
TITLE OF INVENTION: and treatment of infection
FILE REPERENCE: 9710-003-999
CURRENT APPLICATION NUMBER: US/09/198,452A
CURRENT FILING DATE: 1998-11-24
NUMBER OF SEQ ID NOS: 6849
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7;
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Pred. No. 1.1e+02;
7; Mismatches 9; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 460;
                                                                                                                            Length 439;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 KKTFLSVHEVMAVENYAK--DSLQWITDQ---YNKESDD 35
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                                                                                                                          Score 49.5; DB 4;
Pred. No. 41;
5; Mismatches 12;
                                       NAME/KEY: misc feature; OTHER INFORMATION: Incyte ID No. 6509155 g312212
US-09-507-765-33
                                                                                                                                                                                                                                     121 TLLYLHHGLTSDN--KPSLSWLRDAY-REFDRK 150
                                                                                                                                                                                                             4 TFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
26.2%; Score 49.5; Di
Best Local Similarity 35.9%; Pred. No. 44;
Matches 14; Conservative 10; Mismatches
                                                                                                                                                                                                                                                                                                                                                           Sequence 638, Application US/09198452A
Patent No. 6559294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; TYPE: PRT
; ORGANISM: Chlamydia pneumoniae
US-09-198-452A-638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 26.2%;
Best Local Similarity 37.8%;
Matches 14; Conservative
                                                                                                                        Query Match 26.2%;
Best Local Similarity 39.4%;
Matches 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: PRT
ORGANISM: Homo sapiens
US-09-392-714-24
    ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                 RESULT 10
US-09-198-452A-638
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US-09-392-714-24
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LENGTH: 460
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  Indels
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                                                                                                                                                                                                                                 GENERAL INFORMATION:
APPLICANT: Chinnadurai, Govindaswamy
TITLE OF INVENTION: APOPTOPSIS-REGULATING PROTEINS
NUMBER OF SEQUENCES: 35
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                   STREET: 2100 Penneylvania Avenue, N.W. CITY: Washington COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: TBM FC compatible
OPERATUR SYSTEM: FC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
FILING DATE: 21-MAR-1995
CLASSIFICATION: 435
  17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-507-765-33
US-09-507-765-33
Sequence 33, Application US/09507765
Fatent No. 6509155
GENERAL INFORMATION:
APPLICANT: Klinger, Tod M.
APPLICANT: Klewart, Elizabeth A.
APPLICANT: Yue, Henry
APPLICANT: Yue, Henry
TITLE OF INVENTION: GTPASE ACTIVATING PROTEINS
FILE REPRENCE: PC-0010 US
CURRENT APPLICATION NUMBER: US/09/507,765
CURRENT FILING DATE: 2000-02-18
NUMBER OF SEQ ID NOS: 33
SOFTWARE: PERL PROGRAM
SEQ ID NO 33
LENGTH: 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 2;
                                                                        3 KTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4 TFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          36 TLLYLHHGLTSDN--KPSLSWLRDAY-REFDRK 65
5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 26.2%; Score 49.5; D
Best Local Similarity 39.4%; Pred. No. 8.7;
Matches 13; Conservative 5; Mismatches
                                                                                                                                                                                       Sequence 35, Application US/08408095
Patent No. 5858678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLASSIFICATION: 435
ATORNEY/AGENT INFORMATION:
NAME: Mack, Susan J.
REGISTRATION NUMBER: 30,951
TELECOMMUNICATION INFORMATION:
TELEFHONE: (202)293-7060
TELEFAX: (202)293-7060
INFORMATION FOR SEQ ID NO: 35:
SEQUENCE CHARACTERISTICS:
  12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     amino acid
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US-08-408-095-35
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    Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Lynn A Doucette-Stamm and David Bush
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO
ENTEROCOCCUS FAECIUM FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                 ô
TITLE OF INVENTION: BAUMANNII FOR DIAGNOSTICS AND THERAPEUTICS FILE REFERENCE: GTC99-03PA
CURRENT APPLICATION NUMBER: US/09/328,352
CURRENT FILING DATE: 1999-06-04
NUMBER OF SEQ ID NOS: 8252
SEQ ID NO 8182
LENGTH: 404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 50; DB 4; Length 1224;
Pred. No. 1.2e+02;
                                                                                                                                                                                                                                   Score 50; DB 4; Length 404;
Pred. No. 31;
                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES: 7310
CORRESPONDENCE ADDRESS:
ADDRESSEE: GENOME THERAPEUTICS CORPORATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ZIP: 02354
COMPUTER READABLE FORM:
MEDIUM TYPE: CD/ROM ISO9660
COMPUTER: PC
COMPETATING SYSTEM: «Unknown>
SOFTWARE: ASCII
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/107,532A
FILING DATE: 30-Jun-1998
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                              5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: misc feature
LOCATION: (B) LŌCATION 1...1224
SEQUENCE DESCRIPTION: SEQ ID NO: 6220:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME: Ariniello, Pamela Deneke
REGISTRATION NUMBER: 40,489
REFERENCE/DOCKET NUMBER: GTC-012
TELECOMMUNICATION INFORMATION:
TELEPHONE: (781)893-5007
                                                                                                                                                                                                                                                                                                                                                  193 VPEIVKTFDQSKDALPWITVALMKASD 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: 60/085,598
FILING DATE: 14 May 1998
APPLICATION NUMBER: 60/051571
FILING DATE: July 2, 1997
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: Enterococcus faecium
                                                                                                                                                                                                                                                                                                                        8 VHEVMAVENYAKDSLOWITDQYNKESD 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-107-532A-6220
; Sequence 6220, Application US/09107532A
Patent No. 6583275
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET: 100 Beaver Street CITY: Waltham
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 1224 amino acids
                                                                                                                                              ; TYPE: PRT
; ORGANISM: Acinetobacter baumannii
US-09-328-352-8182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX: (781)893-8277
INFORMATION FOR SEQ ID NO: 6220:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STATE: Massachusetts
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS:
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l Similarity 40.7%;
11; Conservative 5
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
HYPOTHETICAL: YES
ORIGINAL SOURCE:
                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
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                                                                                                                                                                                                                                                                              Matches
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, APPLICANT: Gary L. Breton et al. , IITLE OF INVENTION: NUCLEIC ACID AMINO ACID SEQUENCES RELATING TO ACINETOBACTER
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 51; DB 4; Length 766;
Pred. No. 50;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                     APPLICANT: Smith, Allson M
APPLICANT: Smith, Allson M
APPLICANT: Busics Guillen, Regla
APPLICANT: Martin, Catherine R
APPLICANT: Plant Bioscience Limited
TITLE OF INVENTION: Starch Debranching Enzymes
FILE REFERENCE: 97.118
CURRENT APPLICATION NUMBER: US/09/463,238
CURRENT FILING DATE: 2000-01-21
PRIOR APPLICATION NUMBER: PCT/GB98/02280
PRIOR APPLICATION NUMBER: GB 9716185.5
PRIOR FILING DATE: 1997-07-31
NUMBER OF SEQ ID NOS: 30
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 15
LENGTH: 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-463-238

US-09-463-238

Patent No. 6469230

GENERAL INFORMATION:
GAPLICANT: Edwards, Elizabeth A
APPLICANT: Bustos Guillen, Regla
APPLICANT: Bustos Guillen, Regla
APPLICANT: Martin, Catherine R
APPLICANT: Martin, Catherine R
FILE REFERENCE: 97.118
CURRENT APPLICANT: Plant Blossience Limited
TITLE OF INVENTION: Starch Debranching Brzymes
CURRENT APPLICATION NUMBER: US/09/463,238
CURRENT FILING DATE: 1990-07-21
PRIOR FILING DATE: 1990-07-31
PRIOR FILING DATE: 1997-07-31

NUMBER OF SEQ ID NOS: 30
SOFTWARE: Patentin Ver: 2.0
LENGTH: 766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 51; DB 4;
Pred. No. 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 27.0%; Score 51; DB Best Local Similarity 40.7%; Pred. No. 50; Matches 11; Conservative 6; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         292 HNVLRKENFIEKNDITWLEDNWYNEES 318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9 HEVMAVENY-AKDSLQWITDQ-YNKES 33
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; Patent No. 6562958
  APPLICANT: Edwards, Elizabeth A APPLICANT: Smith, Alison M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 27.0%;
Best Local Similarity 40.7%;
Matches 11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ) ORGANISM: Solanum tuberosum
US-09-463-238-6
                                                                                                                                                                                                                                                                                                                                                                                                                 ) ORGANISM: Solanum tuberosum
US-09-463-238-15
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                                                                                                                                                                                                                         Sequence 616, Application US/09198452A

Sequence 616, Application US/09198452A

Sequence 616, Application US/09198452A

Patent No. 6552294

GENERAL INCORMATION:

APPLICANT: Griffais, R.

TITLE OF INVENTION: Thereof and uses thereof, in particular for the diagnosis, preversing the properties of invention: and treatment of infection file Reference: 9710-003-999

CURRENT APPLICATION NUMBER: US/09/198,452A

CURRENT FILING DATE: 1998-11-24

NUMBER OF SEQ ID NOS: 6849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Lynn Doucette-Stamm et al TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO STAPHYLOCOCCUS TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO STAPHYLOCOCCUS FILE REPERENCE: GTC-007
CURRENT APPLICATION NUMBER: US/09/134,001C
CURRENT APPLICATION NUMBER: US 60/064,964
PRIOR APPLICATION NUMBER: US 60/055,779
PRIOR FILING DATE: 1997-014
NUMBER OF SEQ ID NOS: 5674
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Score 57; DB 4; Length 623;
Pred. No. 5.1;
9; Mismatches 11; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |:||||| | |:| :: | | |:| :: | 37 RQKTFLSSHRVLARPSFPVDYCPGKIYDLQEIYEELNAQ 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 RKKTFLSVHEVMAVENYAKD-----SLOWITDQYNKE 32
                                                                                                                       225 LKVEPMDEPEGYSKEKIKEITEKYQKLADEK 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             204 RKKPFLSMMPVVAMYSL-----WLTKKYKK 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 53.5; DE
Pred. No. 3.9;
                                                                                             6 LSVHEVMAVENYAKDSLQWITDQYNKESDDK 36
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7; Mismatches
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US-09-134-001C-4389
; Sequence 4389, Application US/09134001C
; Patent No. 6380370
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; ORGANISM: Staphylococcus epidermidis US-09-134-001C-4389
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; Patent No. 6469230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; TYPE: PRT
; ORGANISM: Chlamydia pneumoniae
US-09-198-452A-616
  Query Match 30.2%;
Best Local Similarity 35.5%;
Matches 11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28.3%;
Local Similarity 35.9%;
hes 14; Conservative
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Best Local Similarity 38.7%
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US-09-463-238-15
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LENGTH: 277
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Matches
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JS-09-107-532A-4726
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                                                                                                                                  48.5
48.5
48.5
Sequence 4726, Ap
Sequence 616, App
Sequence 15, App
Sequence 6, Appl
Sequence 6122, Ap
Sequence 6120, Ap
Sequence 35, Appl
Sequence 35, Appl
Sequence 35, Appl
Sequence 618, Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1, Appl
Appli
                                                                March 18, 2004, 14:07:11; Search time 9.21429 Seconds (without alignments)
201.701 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                    Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 24,
Sequence 4,
Sequence 2,
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Sequence 4
Sequence 4
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Sequence
Sequence
Sequence
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Sequence
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.: /cgn2_6/ptodata/2/iaa/5A_COMB.pep:*

:: /cgn2_6/ptodata/2/iaa/5B_COMB.pep:*

:: /cgn2_6/ptodata/2/iaa/6A_COMB.pep:*

:: /cgn2_6/ptodata/2/iaa/6B_COMB.pep:*

:: /cgn2_6/ptodata/2/iaa/PcTUS_COMB.pep:*

:: /cgn2_6/ptodata/2/iaa/pcTUS_COMB.pep:*
        GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                          US-09-941-314-6
189
1 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-107-532A-4726
US-09-198-452A-616
US-09-134-001C-4389
US-09-463-238-15
US-09-463-238-15
US-09-107-532A-6182
US-09-107-532A-638
US-09-107-532A-638
US-09-104-324B-4
US-09-104-324B-4
US-09-104-324B-4
US-09-104-324B-4
US-09-104-324B-4
US-09-104-324B-4
US-09-104-324B-4
US-09-104-324B-4
US-08-13-578-5
US-08-13-578-5
US-08-13-578-5
US-08-13-578-5
US-08-13-518-5
US-08-137-132-5
US-08-69-781B-5
US-08-107-133A-5
US-08-108-123A-5
US-08-108-123A-5
US-08-108-123A-5
                                                                                                                                                                                                      Potal number of hits satisfying chosen parameters:
                                                                                                                                                                                    389414 segs, 51625971 residues
                                                                                                                                                                                                                                                                                                                                                                                                                             SUMMARIES
                                                                                                                                                                                                                                                         Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                - protein search, using sw model
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Gapop 10.0 , Gapext 0.5
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Maximum DB seq length: 200000000
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Match Length
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Perfect score:
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                                                 OM protein
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                                                                     Run on:
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APPLICANT: Lynn A Doucette-Stamm and David Bush
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO
ENTEROCOCCUS FAECIUM FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                    Appli
Appli
Appli
Appli
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                                       Sequence
                                                                                                                                                                                                                                                                                                        Sequence Sequence S
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CORRESPONDENCE ADDRESS:
ADDRESSEE: GENOME THERAPEUTICS CORPORATION
                                                                                                                                                                                                                                                                                     US-09-543-681A-6416
                                                                                                                                                                                                                                                                                                                          US-09-540-236-2588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/107,532A
FILING DATA:
APPLICATION DATA:
APPLICATION NUMBER: 60/085,598
FILING DATE: 14 May 1998
APPLICATION NUMBER: 60/051571
FILING DATE: JULY 2, 1997
ATTORNEY/AGENT INTERMATION:
US-07-797-556-2
US-08-308-881-2
US-09-058-263-2
US-09-059-099-2
US-09-058-264-2
US-09-058-264-2
PCT-US55-06530-2
US-09-313-942-7
                                                                                                                                                US-08-825-558-6
US-09-312-611-6
US-09-762-724-9
US-09-313-942-26
US-09-313-942-24
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LOCATION: (B) LOCATION 1...623
SEQUENCE DESCRIPTION: SEQ ID NO: 4726:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER: GTC-012
TELEPHONE: (781) 893-507
TELEPHONE: (781) 893-8277
INFORMATION FOR SEQ ID NO: 4726:
SEQUENCE CHARACTERISTICS:
LENGTH: 623 amino acids
                                                                                                                                                                                                                                                                                                                                                                                  ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: Ariniello, Pamela Deneke
REGISTRATION NUMBER: 40,489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM: Enterococcus faecium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 4726, Application US/09107532A Patent No. 6583275 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ZIP: 02354
COMPUTER READABLE FORM:
MEDIUM TYPE: CD/ROM ISO9660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER: PC
OPERATING SYSTEM: <Unknown>
SOPTWARE: ASCII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET: 100 Beaver Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CITY: Waltham
STATE: Massachusetts
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY: linear
MOLECULE TYPE: protein
HYPOTHETICAL: YES
ORIGINAL SOURCE:
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DE ORF27.

OS Vibrio cholerae.

OC Vibrio cholerae.

OC Vibrionaceae; Vibrio.

OC Vibrionaceae; Vibrio.

OC Vibrionaceae; Vibrio.

OC Vibrionaceae; Vibrio.

ON NOB1_TaxID=666;

RN [1]

RP SEQUENCE FROM N.A.

RC STRAIN=6506;

RX MEDLINE=20476413; PubMed=11021935;

RA Clark C.A., Purins L., Kaewrakon P., Focareta T., Manning P.A.;

RA Clark C.A., Purins L., Kaewrakon P., Focareta T., Manning P.A.;

RA Clark C.A., Purins L., Kaewrakon P., Focareta T., Manning P.A.;

RT "The Vibrio cholerae Ol chromosomal integron.";

RI Microbiology 146:2605-2612(2000).

BR EMBL; AF179596; AAF71189:1; -.

SQ SEQUENCE 301 AA; 33413 MW; FOD66AF91E11609F CRC64;

Ouery Match

Best Local Similarity 47.4%; Pred. No. 48;

MAtches 9; Conservative 3; Mismatches 7; Indels 0; Gaps

Qy 2 ARKKTFLSVHEWMGTEVFA 226

DD 208 ARVNGFSSIHEMMGTEVFA 226
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Search completed: March 18, 2004, 14:21:25 Job time : 15.1825 secs

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5 KTFLSVHEVMAVENYAK 21
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                                                                                                                                                                                       Nature 423:81-86(2003).
EMBL; AE017041; AAP29248.1;
TIGR; BA5610; -.
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01-OCT-2000 (TrEMBLrel. 15,
01-OCT-2000 (TrEMBLrel. 15,
01-DEC-2001 (TrEMBLrel. 19,
                                                                                                                                                 closely related bacteria.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5 KTFLSVHEVMAVENYAK
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Best Local Similarity
Matches 9; Conserv
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SEQUENCE 176 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Complete proteome
SEQUENCE 175 AA
                                                                                Fraser C.M.;
Hazen A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q9L985
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Q9L985
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Cherevach I., Davis P., Goodhead I., Stevens K., Mungall K.,
Cherevach I., Davis P., Goodhead I., Stevens K., Mungall K.,
Berriman M., Pain A., Hall N., Akkin R., Chillingworth C., Doggett J.,
Ormond D., Sanders M., Hayes R., Hall S., Quail M., Barrell B.;
Submitted (SEP-2002) to the EMBL/GenBank/DDBJ databases.
EMBL; AL844505; CAD50459.1; -.
Hypothetical protein.
SEQUENCE 1025 AA; 123081 MW, 6AA4751E25D5F7FF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
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Pred. No. 1.46+02;
7; Mismatches 2; Indels 1;
                                                                                                                                                                                                                                                                                                                                                                            DB 16; Length 451;
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Plasmodium falciparum (isolate 3D7).
Eukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium.
NCBI_TaxID=36329;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
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Bacteria; Firmicutes; Bacillales; Bacillaceae; Bacillus.
NCBI_TaxID=198094;
                              GO; GO:0005524; F:ATP binding; IEA.
GO; GO:0003678; F:DNA helicase activity; IEA.
GO; GO:0006260; P:DNA replication; IEA.
INCEPTO; IPRO07694; DnaB.
InterPro; IPRO07693; DnaB.N.
Pfam; PF00772; DnaB.N.
Pfam; PF00776; DnaB.C: 1.
SEQUENCE 451 AA; E50587 MW; D0EAA995B134390F CRC64;
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Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                             5; Mismatches
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Pred. No. 61;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    156 SNKSSFRPIHDVLA-ENYQK 174
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697 QKKSFMSIHDEIVNILNY 714
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BAC64255.1; -
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Best Local Similarity 45.0%;
Matches 9; Conservative
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01-MAR-2003 (TrEMBLrel. 23,
01-MAR-2003 (TrEMBLrel. 23,
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Best Local Similarity 44.4%;
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-MAR-2003 (TrEMBLrel. 23, 01-MAR-2003 (TrEMBLrel. 23, Hypothetical protein.
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   EMBL: AP005144;
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081CI3
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081JTP
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Hazen A., Cline R., Redmond C., Thwaite J.E., White O., Salzberg S.L.
Thomason B., Friedlander A.M., Koehler T.M., Hanna P.C., Kolsto A.-B.
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MEDLINE=22608415; PubMed=12721630;

Ivanova N., Sorokin A., Anderson I., Galleron N., Candelon B.,

Ivanova N., Sorokin A., Reznik G., Mikhailova N., Lapidus A.

Kapatral V., Bhattacharyya A., Reznik G., Mikhailova N., Lapidus A.

Chu L., Mazur M., Goltsman E., Larsen N., D'Souza M., Walunas T.,

Chor Chi Y., Pusch G., Haselkorn R., Fonstein M., Ehrlich S.D.,

Overbeek R., Kyrpides N.

"Genome sequence of Bacillus cereus and comparative analysis with
                                                                                                           genome sequence of Bacillus anthracis Ames and comparison
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40.0%; Score 44; DB 16; Length 175;
Best Local Similarity 52.9%; Pred. No. 27;
Matches 9; Conservative 2; Mismatches 6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         h 40.0%; Score 44; DB 16; Length 176; Similarity 52.9%; Pred. No. 28; 9; Conservative 2; Mismatches 6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bacillus cereus (strain ATCC 14579 / DSM 31).
Bacteria; Firmicutes; Bacillales; Bacillaceae; Bacillus.
NCBL_TaxID=226900;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        175 AA; 21395 MW; 58583126E6657D80 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          176 AA; 21582 MW; 46285FF1A4B528A1 CRC64;
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01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
RNA polymerase ECF-type sigma factor.
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Last sequence update)
Last annotation update)
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InterPro; IPRO07627; Sigma70_r2.
InterPro; IPRO07630; Sigma70_r4.
Pfam; PF04942; sigma70_r4.
Pfam; PF04545; sigma70_r4; 1.
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InterPro; IPR007627; Sigma70_r2.
InterPro; IPR007630; Sigma70_r4.
Pfam; PF04942; sigma70_r4.
Pfam; PF04545; sigma70_r4; 1.
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Bacteria; Firmicutes; Lactobacillales; Streptococcaceae;
                            Streptococcus.
NCBI_TaxID=186103, 198466;
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                                                                                      SEQUENCE FROM N.A.
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Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Kelley M.L., Powell W.H., Hahn M.E., Van Beneden R.J.; Man Aryl Hydrocarbon Receptor from the Softehell Clam, Mya arenaria."; "An Aryl Hydrocarbon Receptor from the Softehell Clam, Mya arenaria."; Submitted (APR-200) to the EMBL/GenBank/DDBJ databases.
-- SIMILARITY: BELONGS TO THE BASIC HELIX-LOOP-HELIX (BHLH) FAMILY OF
                                                                                                                                                                     Gaps
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EMBL, AF261769; AAF70378.1; -. GO; 0004872; F: receptor activity; IEA.

GO; GO;0004875; P: requlation of transcription, DNA-dependent; IEA.

GO; GO:0007165; P: signal transduction; IEA.

InterPro; IPR011092; HIM basic.

InterPro; IPR001610; PAC.
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Myoidea; Myidae; Mya.
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01-OCT-2002 (TrEMBLrel. 22, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
Putative DNA polymerase III delta prime subunit (Putative DNA polymerase III delta prime subunit (Putative DNA SPYMIE 0348 OR SPYMIE 0348 OR SPYMIE 0348 OR SPYMIE 0348 SIREPLOCOCCUS pyogenes (serotype M18), and Streptococcus pyogenes (serotype M3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 45; DB 5; Length 852;
Pred. No. 98;
2; Mismatches 4; Indels
                                                                                                                           40.9%; Score 45; DB 3; Length 706; 44.4%; Pred. No. 80;
                                                                                                                                                                     7; Indels
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                                                                                77711 MW; AAB3EA4CAD8E5F53 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                Created)
Last sequence update)
Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                             852 AA
                                                                                                                                                                     3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Aryl hydrocarbon receptor-like protein.
                                                                                                                                               Pred. No.
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                          CBS_domain.
                                                                                                                                                                                                                                    222 KTLVTLHRTMGVERLTKD 239
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                                                                                                                                                                                                            5 KTFLSVHEVMAVENYAKD 22
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PROSITE; PS50888; HLH 2; 1.
PROSITE; PS50112; PAS; 1.
                                                                                                                                             Best Local Similarity 44.4
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity 60.0 hes 9; Conservative
InterPro; IPR002550; CBS
                   InterPro; IPR000644; CBS
Pfam; PF00571; CBS; 2.
Pfam; PF01595; DUF21; 1.
                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
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Pfam; PP00985; PAC; 1.
Pfam; PP00989; PAS; 1.
SWART; SW00353; HLH; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                      01-OCT-2000 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=6604;
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                                                                                  SEQUENCE
                                                                                                                           Query Match
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08P213
1D 08P21
AC 08P21
DT 01-0C
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DT SPYMI
GN SPYMI
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GS Strep
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Hayashi H., Hamada S.;
"The genome of invasive Streptococcus pyogenes; a comparative analysis
of S. pyogenes SSI-1, SF370 and MGAS8232.";
Submitted (MAY-2002) to the EMBL/GenBank/DDBJ databases.
                                                    Smoot J.C., Barbian K.D., Van Gompel J.J., Smoot L.M., Chaussee M.S., Sylva G.L., Sturdevant D.E., Ricklefs S.M., Porcella S.F., Parkins L.D., Beres S.B., Campbell D.S., Smith T.M., Zhang Q., Kapur V., Daly J.A., Veasy L.G., Musser J.M.; Genome sequence and comparative microarray analysis of serotype M18 group A Streptococcus strains associated with acute rheumatic fever outbreaks ";
                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
SPECIES-S, pyogenes; STRAIN=MGAS315 / Serotype M3;
MEDLINE=2213808; PubMed=12122206;
MEDLINE=2213808; PubMed=12122206;
Mammarella N.D., Liu M.-Y., Smoot J.C., Porcella S.F., Parkins L.D., Campbell D.S., Smith T.M., McCormick J.K., Leung D.Y.M., Schlievert P.M., Musser J.M.;
Genome sequence of a serotype M3 strain of group A Streptococcus: phage-encoded toxins, the high-virulence phenotype, and clone
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Nakagawa I., Kurokawa K., Nakata M., Tomiyasu Y., Yamashita A.,
Yamazaki K., Okahashi N., Kawabata S., Yasunaga T., Hattori M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           40.5%; Score 44.5; DB 16; Length 446; 45.0%; Pred. No. 60;
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Bacteria; Firmicutes; Lactobacillales; Streptococcaceae;
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Hypothetical protein; Complete proteome.
SEQUENCE 446 AA; 50028 MW; FD98A785AAA3BE2E CRC64;
SPECIES=S.pyogenes; STRAIN=MGAS8232 / Serotype M18;
MEDLINE=21927593; PubMed=11917108;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-JUN-2003 (TrEMBLrel. 24, Created)
01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
01-CCT-2003 (TrEMBLrel. 25, Last annotation update)
Putative DNA polymerase III delta prime subunit.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Proc. Natl. Acad. Sci. U.S.A. 99:10078-10083(2002)

EMBL; AE009979; AAL97100.1; -.

EMBL; AE014150; AAM79297.1; -.

EO, GO:0005524; F:ATP binding; IEA.

GO; GO:000578; F:DNA helicase activity; IEA.

GO; GO:0006260; P:DNA replication; IEA.
                                                                                                                                                                                                                                                                                                                              Proc. Natl. Acad. Sci. U.S.A. 99:4668-4673(2002).
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InterPro; IPR007692; DnaB_helicase.
InterPro; IPR007693; DnaB_N.
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Pfam; PF03796; DnaB_C; 1.
ProDom; PD332834; DnaB_C; 1.
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273 A.A.

PRT;

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"Genome sequence of the hyperthermophilic crenarchaeon Pyrobaculum aerophilum.",
                                                                                                                                                                                                                                                                                   Fitz-Gibbon S.T., Ladner H., Kim U.-J., Stetter K.O., Simon M.I.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mannhaupt G., Vetter I., Schwarzlose C., Mitzel S., Feldmann H.; Yeast 0:0-0(0). EMBL; Z74802; CAA99069.1; -. EMBL; Z74802; CAA62524.1; -. PIR; S61717; S61717. S61717. S61717.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30; GO:0007005; P:mitochondrion organization and biogenesis; IMP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
Saccharomycetales; Saccharomycetaceae; Saccharomyces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          41.4%; Score 45.5; DB 17; Length 273; 45.0%; Pred. No. 24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Feldmann H., Mannhaupt G., Vetter I.;
Submitted (JUL-1996) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (JUL-1996) to the EMBL/GenBank/DDBJ databases
                                                                                                                                               Pyrobaculum aerophilum.
Archaea; Crenarchaeota; Thermoprotei; Thermoproteales;
Thermoproteaceae; Pyrobaculum.
NCBI_TaxID=13773;
                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam, PF00535, Glycos tran<u>ēf 2; ī.</u>
PROSITE; PS00225, CRYSTALLIN BETAGAMMA; 1.
Transferase; Complete protecter SEQUENCE 273 AA; 31634 MW; A002488D5A68663B CRC64;
                                                                                   01-MAR-2002 (TrEMBLrel. 20, Created)
01-MAR-2002 (TrEMBLrel. 20, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
Glycosyltransferase (Type 2).
                                                                                                                                                                                                                                                                                                                                        Procedural, Acad. Sci. U.S.A. 99:984-989 (2002). EMBL, AE009767; AA462796.1; -. GO.; GO.0016740, F:transferase activity, IEA. InterPro; IPR001064; Crystallin. InterPro; IPR001173; Glyco_trans_2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Saccharomyces cerevisiae (Baker's yeast).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chromosome XV reading frame ORF YOL060C.
                                                                                                                                                                                                                                                   STRAIN=IM2 / ATCC 51768 / DSM 7523;
MEDLINE=21664397; PubMed=11792869;
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                                                          PRELIMINARY;
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                                                                                                                                                                                                                                                                                                    Miller J.H.;
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                           RESULT 7
Q8ZZ45
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                                                                  "Genome sequence of the nematode C. elegans: a platform for investigating biology. The C. elegans Sequencing Consortium."; Science 282:2012-2018(1998).
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                                                                                                                                                                                                                                                                             EMBL; U49830, ARX1482.1; -.

WormPep; C33F10.5b; CE25803.

InterPro; IPR003961; FN III.

InterPro; IPR003557; FN III.

InterPro; IPR003598; Ig_C2.

R InterPro; IPR0041; ig, 5.

R SMART; SM0060; FN3; 4.

R SMART; SM00408; IG_2.

R PROSITE; PS50835; IG_LIKE; 6.

Hypothetical protein; Immunoglobulin domain.

SEQUENCE 1227 AA; 136318 MW; 1E808292F7BD2C3A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rhee J.H., Kim S.Y., Chung S.S., Kim J.J., Moon Y.H., Jeong
Choy H.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 48; DB 5; Length 1227;
Pred. No. 44;
2; Mismatches 6; Indels
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"The sequence of C. elegans cosmid C33F10.";
Submitted (FEB-1996) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                      Waterston R.;
Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Last sequence update)
Last annotation update)
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                              STRAIN=Bristol N2;
MEDLINE=99069613; PubMed=9851916;
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57.9%;
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NCBI_TaxID=672;
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Gaps

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Indels

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7; Mismatches

Last annotation update)

Last sequence update)

Created)

706 AA

PRT;

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SEQUENCE FROM N.A.
STRAIN=TW-183,
STRAIN=TW-183,
STRAIN=TW-181,
SCHuhmacher A., Muehldorfer I., Bensch K.W., Schaefer K.P.,
Schneider S., Pohl T., Essig A., Marre R., Melchers K.;
Schneider S., Pohl T., Essig A., Marre R., Melchers K.;
"The genome sequence of Chlamydia pneumoniae TW183 and comparison with other Chlamydia strains based on whole genome sequence analysis.";
Submitted (MAY-2002) to the EMBL/GenBank/DDBJ databases.
EMBL; AE0011642; AAD18714.1;
EMBL; AE002178; AAR98780.1;
EMBL; AE017159; AAP98525.1;
                                                                                                                                                                                                                                                                                                             MEDITME=20150255; PubMed=10684935; Read T.D., Brunham R.C., Shen C., Gill S.R., Heidelberg J.F., Read T.D., Brunham R.C., Shen C., Gill S.R., Heidelberg J.F., White C., Hickey E.K., Peterson J., Utterback T., Berry K., Bass S., Linher K., Weidman J., Khouri H., Craven B., Bowman C., Dodson R., Gwinn M., Nelson W., DeBoy R., Kolonay J., McClarty G., Salzberg S.L. Bisen J., Fraser C.M.;

"Genome sequences of Chlamydia trachomatis MoPn and Chlamydia pneumoniae AR39.";

Nucleic Acids Res. 28:1397-1406(2000).
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01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
C33F10.5 OR C33F10.5B.
Caenorhabditis elegans.
Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
Rhabditidae; Peloderinae; Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-20330349; PubMed-10871362; Shirai M., Kishi F., Ouchi K., Shirai M., Hirakawa H., Kimoto M., Tabuchi M., Kishi F., Ouchi K., Shiba T., Ishii K., Hattori M., Kuhara S., Nakazawa T.; Comparigon of Whole genome sequences of Chlamydia pneumoniae J138 from Japan and CWL029 from USA.";
                              STRAIN=CWL029;
MEDLINE=59206606; PubMed=10192388;
Kalman S., Mitchell W., Marathe R., Lammel C., Fan J., Hyman R.W.,
Olinger L., Grimwood J., Davis R.W., Stephens R.S.;
"Comparative genomes of Chlamydia pneumoniae and C. trachomatis.";
Nat. Genet. 21:385-389(1999).
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PROSTIE; PS00142; ZINC PRÖTEABE; 1.
Hypothetical protein; Gomplete proteome.
BEQUENCE 184 AA; 22024 MW; EF36820D1A97A814 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PIR; B86562; B86562.
PIR; D72061; D72061.
TIGN; CP0175; -.
GO; GO:000837; F:metallopeptidase activity; IEA.
GO; GO:0008270; F:zinc ion binding; IEA.
GO; GO:0006508; P:proteolysis and peptidolysis; IEA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3 RKKTFLSVHEVMAVENYAKD 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              26 RKKTFLSSHRVLARPSFPVD 45
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SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                                            STRAIN=AR39;
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   OCC GENERAL DESCRIPTION OCC OCC GENERAL DESCRIPTION OC
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Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBI_TaxID=10116;
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                                                                                                                                                                                    SEQUENCE FROM N.A.

Hamil K.G., Liu Q., Zhang Y.-L., French F.S., Hall S.H.;

"SC13: A novel epididymal specific member of the cystatin family.";

"SC13: A novel epididymal specific member of the cystatin family.";

Submitted (JAN-2001) to He EMBL/GenBank/DDBJ databases.

EMBL, AF335480; AAL71991.1; -.

GO; GO:0004869; F:cystaine protease inhibitor activity; IBA.

InterPro; ITRO00001; Cystatin.

Frem; PF00031; Cystatin; 1.

SMART; SM00043; CY; 1.

SEQUENCE 138 AA; 16506 MW; E49440ACA3585C64 CRC64;
                                                               Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Butheria, Primates, Catarrhini, Hominidae, Homo.
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CPN0574 OR CP00574 OR CP0175 OR CPB0596.

Chlamydia pneumoniae (Chlamydophila pneumoniae).

Bacteria; Chlamydiae; Chlamydiales; Chlamydiaceae; Chlamydophila.

NCBI_TaxID=83558;
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Hamil K.G., Hall S.H.;
Har., Har. 2002]
GO, GO.0004869; F.cysteine protease inhibitor activity; IEA.
InterPro; IPR00010; Cystatin.
Fram, PF00011; cystatin; 1.
SEQUENCE 113 AA; 16686 MW; E1E36DB786B4D08C CRC64;
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01-MAY-1999 (TrEMBLrel. 10, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
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Last annotation update)
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Pred. No. 1.2e-10;
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                                    sapiens (Human)
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                                                                                                                               NCBI_TaxID=9606
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Q927X9;
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Q8K5A3

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Q8iy28 homo sapien Q96ef(homo sapien O49991 lycoperaico Q8ecr2 pseudomonas Q9666 caenorhabdi Q25194 helicobacte Q88pd pseudomonas Q93542 caenorhabdi Q8srk17 pseudomonas

Q88C18 pseudomonas Q91xy5 neisseria m Q91yv5 neisseria m Q19003 caenorhabdi G98ej7 lupinus alb Q94e49 cryza sativ Q97ky8 clostridium Q48785 arabidopsis Q82214 enterococcu Q9yxy4 human immun Q98506 human immun Q94z16 human immun Q94z16 human immun Q84z50 plasmodium Q84550 plasmodium Q84665 seeudoalter C6863 neptunomona Q845144 oryza sativ Q99xz1 staphylococ Q8nv94 staphylococ

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protein

Run on:

Sequence:

Searched:

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[1] —
SEQUENCE FROM N.A. Shang Y.-L., French F.S., Hall S.H.;
Hamil K.G., Liu Q., Zhang Y.-L., French F.S., Hall S.H.;
Hamil K.G., Liu Q., Zhang Y.-L., French F.S., Hall S.H.;
SC13: A novel epididymal specific member of the cystatin family.";
Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.
EMBL, AF335481, AAL1992.1; -.
GO, GO,004869; F.Crystein protease inhibitor activity; IEA.
InterPro; IPR000010; Cystatin.
Pfam; PP00011; Cystatin.
Pfam; PP00011; Cystatin.
SEQUENCE 103 AA; 112285 MW; 05DD92C47387B022 CRC64;
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Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
NCBI_TaxID=9606;
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01-MAR-2002 (TrEMBLrel. 20, Last seq
01-JUN-2003 (TrEMBLrel. 24, Last ann
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Q90006
Q97516
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Q9JXY5
Q9JVY6
Q19003
Q9SEJ7
Q97K49
Q97K49
Q97K49
Q97XW4
Q81Y28
Q96EF0
O49991
Q8SCR2
Q966N6
O25194
Q88BQ6
Q93542
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    Homo sapiens (Human)
    01-MAR-2002 (
01-MAR-2002 (
01-JUN-2003 (
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Q8WXU6;
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       28WXU5
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Q8kxu6 homo sapien
Q9z7x9 chlamydia p
Q9bia2 caenorhabdi
Q8db15 vibrio vuln
Q8z45 pyrobaculum
Q12296 saccharomyc
Q9ng54 mya arenari
Q8p2i3 streptococc
Q87an1 streptococc
Q87an1 streptococc
Q81ci3 plasmodium
Q81jt8 bacillus an
Q81jt8 bacillus an
Q81jt8 bacillus an
Q81g99 bacillus ce
Q91985 vibrio chol
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                          GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
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Maximum Match 100%
Listing first 45 summaries
                                                                                                                      protein search, using sw model
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1: sp_archea:*
3: sp_bacteria:*
4: sp_human:*
5: sp_invertebrate:*
5: sp_mammal:*
5: sp_mammal:*
5: sp_mhc:*
6: sp_phage:*
6: sp_plant:*
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QBZ3
                                                                                                                                                                                                                                                          US-09-941-314-5
110
1 QARKKTFLSVHEVMAVENYAKD
                                                                                                                                                                                                                                                                                                                                                   BLOSUM62
Gapop 10.0 , Gapext 0.5
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Minimum DB seq length: 0
Maximum DB seq length: 200000000
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Match Length DB
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Gaps

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Result Š

Search completed: March 18, 2004, 14:16:09 Job time : 3.61905 secs

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4
                                                     RESULT 15
GSBP_CHICK
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                                                                                         This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its most by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                      28-FEB-2003 (Rel. 41, Created)
28-FEB-2003 (Rel. 41, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
28-FEB-2003 (Rel. 41, Last annotation update)
(Samposylmethionine decarboxylase proenzyme (EC 4.1.1.50) (AdoMetDC) (SambC) (Contains: S-adenosylmethionine decarboxylase beta chain; S-adenosylmethionine decarboxylase alpha chain).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CHAIN (BY SIMILARITY).
S-ADENOSYLMETHIONINE DECARBOXYLASE ALPHA
                                                                                                                                                                                                                                                       STRAIN=ATCC 15692 / PAO1;
MEDLINE=20437337; Pabled=10984043;
MEDLINE=20437337; PubMed=10984043;
Stover C.K., Pham X.-Q.T., Erwin A.L., Mizoguchi S.D., Warrener P., Hickey M.J., Brinkman F.S.L., Hufnagle W.O., Kowalik D.J., Lagrou M., Garber R.L., Goltry L., Tolentino E., Westbrock-Wadman S., Yuan Y., Brody L.L., Coulter S.N., Pelger K.R., Kas A., Larbig K., Lim R.M., Spencer D.H., Wong G.K.-S., Wu Z., Paulsen I.T., Reizer J., Saier M.H., Hancock R.E.W., Lory S., Olson M.V.; "Complete geguence of Pseudomonas aeruginosa PAO1, an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SIMILARITY)
 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S-ADENOSYLMETHIONINE DECARBOXYLASE BETA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF02675; AdoMetDC; 1.
PIRSF; PIRSF001356; SAM decarboxylas; 1.
Spermidine biosynthesis; Lyase; Decarboxylase; Zymogen; Pyruvate;
                                                                                                                                                                                                           Bacteria, Proteobacteria, Gammaproteobacteria, Pseudomonadales,
Pseudomonadaceae, Pseudomonas.
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CLEAVAGE (NONHYDROLYTIC) (BY SIMI:
CONVERTED TO A PYRUVOYL GROUP (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   36.8%; Score 40.5; DB 1; Length 264; 36.8%; Pred. No. 20;
 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6181DA3988042C65 CRC64;
 10;
                                                                                                  264 AA.
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SIMILARITY)
                                   SO KKVMFYGAHIAEAINNYAPD 69
                   3 RKKTFLSVHEVMAVENYAKD 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; AE004500; AAG04043.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              264 AA; 30478 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PIR; D83564; D83564.
HAMAP; MF 00465; -; 1.
InterPro; IPR003826; SAMDC.
8; Conservative
                                                                                                  STANDARD;
                                                                                                                                                                                                    Pseudomonas aeruginosa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       264
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            112
                                                                                                                                                                                           SPED OR PA0654.
                                                                                                                                                                                                                                     NCBI_TaxID=287;
                                                                                                  SPED PSEAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
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Matches
                                                                            RESULT
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Gaps

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Indels

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Pred. No. 20; 6; Mismatches

Best_Local Similarity 36.8 Matches 7; Conservative

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -!- CATALYTIC ACTIVITY: Dolichyl diphosphooligosaccharide + protein L-asparagine = dolichyl diphosphate + a glycoprotein with the oligosaccharide chain attached by glycosylamine linkage to protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 [54:1053-1060(1988).
FUNCTION: TRANSFER THE POLYSACCHARIDE SIDE-CHAINS OF GLYCOPROTEINS
TO AN ASPARAGINE RESIDUE OF ASN-X-SER/THR SITES IN NASCENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROSITE; PS00014; ER TARGET; 1.
PROSITE; PS00194; THTOREDOXIN; I.
Redox-active center; Isomerase; Endoplasmic reticulum; Repeat; Signal.
SIGNAL 1. 17
                                                                                                                                                                                                                                                                                                                                                                                                                                varius garius vinicken).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
                                                                                                                                                                                                                                                                                 01-FEB-1996 (Rel. 33, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Dolichyl-diphosphooligosaccharide-protein glycotransferase precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE-88327849; PubMed-2458190; Geetha-Habib M., Noiva R., Kaplan H.A., Lennarz W.J.; "Glycosylation site binding protein, a component of oligosaccharyl transferase, is highly similar to three other 57 kd luminal proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SE REDOX-ACTIVE (BY SIMILARITY)
401 REDOX-ACTIVE (BY SIMILARITY)
508 PREVENT SECRETION FROM ER.
56892 MW, D2BAOES872BES8BE CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                    (EC 2.4.1.119) (Glycosylation site-binding chain) (GSBP)
Gallus gallus (Chicken).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -!- SUBCELLUZAR LOCATION: Endoplasmic reticulum lumen.
-!- SIMILARITY: TO PROTEIN DISULFIDE ISOMERASE.
-!- SIMILARITY: Contains 2 thioredoxin domains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
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                                                                                                                                                                                       508 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ed. No. 41;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
36.8%; Score 40.5;
Best Local Similarity 45.5%; Pred. No. 41;
Matches 10; Conservative 3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Interpro; IPR005788; Disulph isom.
Interpro; IPR005792; Disulphide isom.
Interpro; IPR006662; Thiored.
Interpro; IPR006662; Thiored.
Interpro; IPR006663; Thiored.
PERM; PF00085; Thioredox_dom2.
PERM; PF00085; THIOREDOXIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TIGREAMS; TIGRO1130; ER PDI fam; 1.
TIGREAMS; TIGRO1126; pdl dom; 2.
PROSITE; PSO0014; ER TARGET; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2 ARKKTF---LSVHEVMAVENYA 20
01-OCT-1989 (Rel. 12, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; M22594; AAA64295.1; -.
HSSP; P07237; 1MEK.
                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     505 5
508 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      L-asparagine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=9031;
                                                                                                                                                                                       CHICK
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Haemophilus influenzae.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         456 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HSSP; P00390; 1ALG.
TIGR; HI0161; -.
                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                             NCBI_TaxID=727;
                                                                                                                                                    Barcak G.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Venter J.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACT SITE
SEQUENCE
Capesius I., Bloecher R.;

"A molecular approach to bryophyte systematics.";

"A molecular approach to bryophyte systematics.";

"Submitted (NOV-1999) to the EMBL/GenBank/DDBJ databases.

-I- FUNCTION: One of the primary rRNA binding proteins, it binds directly to 16S rRNA where it nucleates assembly of the body of the 30S subunit (By similarity).

-I- FUNCTION: With S5 and S12 plays an important role in translational accuracy (By similarity).

-I- SUBUNIT: Part of the 30S ribosomal subunit. Contacts protein S5.

The interaction surface between S4 and S5 is involved in control of translational fidelity (By similarity).

-I- SUBCELLUIAR LOCATION: Chloroplast.

-I- SUBCELLUIAR LOCATION: Chloroplast.

-I- SIMILARITY: Belongs to the S4P family of ribosomal proteins.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration
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                                                                                                                                                                                                               Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Marchantiophyta, Marchantiopsida, Marchantiidae, Ricciales, Ricciale
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0
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SMART; SMO315; 24; 1.
SMART; SM0315; 24; 1.
PROSITE; PS00612; RIBOSOMĀL_S4; 1.
PROSITE; PS50889; S4; 1.
Ribosomal protein; RNA-binding; Chloroplast.
Sibosomal protein; RNA-binding; Chloroplast.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            37.3%; Score 41; DB 1; Length 202; 36.8%; Pred. No. 12; ive 7; Mismatches 5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-NOV-1995 (Rel. 32, Created)
01-NOV-1995 (Rel. 32, Last sequence update)
15-MAR-2004 (Rel. 43, Last annotation update)
Glutathione reductase (EC 1.8.1.7) (GR) (GRase).
GOR OR HI0161.
                                                                                    28-FEB-2003 (Rel. 41, Last sequence update) 28-FEB-2003 (Rel. 41, Last annotation update) Chloroplast 30S ribosomal protein S4.
                      202 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HAMAP; MF_01306; -; 1.
InterPro; IPR001012; Ribosomal_S4.
InterPro; IPR005709; Ribosomal_S4_b/o.
InterPro; IPR002942; S4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |: || ::|:: || |::
182 REWIFLKINELLVVEYYSR 200
                                                                                                                                                                        Ricciocarpos natans (Liverwort).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3 RKKTFLSVHEVMAVENYAK 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam; PF00163; Ribosomal S4; 1.
Pfam; PF01479; S4; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; AJ251062; CAB92155.1; -. HSSP; P81288; 1C05.
                                                               (Rel. 41, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 36.8%;
Matches 7; Conservative
                    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STANDARD;
                                                                                                                                                                                                                                                                                                                               TISSUE=Gametophyte;
                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                               NCBI_TaxID=53035;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 13
GSHR HABIN
ID GSHR HABIN
AC P43783;
DT 01-NOV-1995
DT 01-NOV-1995
DT 15-MAR-2004
DE Glutathione
GN GOR OR HI016
                                                             28-FEB-2003
                    RR4 RICNA
O9M4C2;
                      8
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OR SECCETIA, PROCEOGRACEFIA; Gammaproteobacteria; Pasteurellales;
NOTE, TAXID-770.
RESIDENCE ROWN N.
R
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Gaps

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Indels

2

7; Mismatches

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390 SOKKTVVTAADVIÄAKNLÄK 409
                       2 ARKKTFLSVHEVMAVENYAK 21
8; Conservative
                                                                                                          RR4 HOOLU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                  RESULT 11
RR4_HOOLU
Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its
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noved. Usage by and for commercial
(See http://www.isb-sib.ch/announce/
                                                                               PRINTS; PRO1042; TRNASYNTHASP.
TIGREAMs; TIGR00457; asnS; 1.
PROSITE; PS50862; AA_TRNA_LIGASE_II; 1.
Aminoacyl-tRNA synthetase; Protein biosynthesis; Ligase; ATP-binding;
                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ruepp A., Graml W., Santos-Martinez M.-L., Koretke K.K., Volker C., Mewes H.-W., Frishman D., Stocker S., Lupas A.N., Baumeister W.; "The genome sequence of the thermoacidophilic scavenger Thermoplasma
                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SMART; SM00382; AAA; 1.
TIGRFAMs; TIGR00764; lon rel; 1.
Hypothetical protein; Hydrolase; Serine protease; ATP-binding;
Complete proteome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   use by non-profit institutions as long as its content modified and this statement is not removed. Usage by and entities requires a license agreement (See http://www.isb-
                                                                                                                                                                   Match 18.2%; Score 42; DB 1; Length 466; Local Similarity 47.1%; Pred. No. 21; Lonservative 5; Mismatches 4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                         Archaea; Euryarchaeota; Thermoplasmata; Thermoplasmatales;
Thermoplasmataceae; Thermoplasma.
                                                                                                                                              466 AA; 54136 MW; 52946E567AD0E826 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BY SIMILARITY.
FD465CD99F5B38F7 CRC64;
                                                                                                                                                                                                                                                                                                                                             16-OCT-2001 (Rel. 40, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Putative protease La homolog type 1 (EC 3.4.21.-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Nature 407:508-513(2000).
-1- SIMILARITY: Belongs to peptidase family S16.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATP (POTENTIAL).
                                                                                                                                                                                                                                                                                                         657 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          or send an email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Interpro; IPR003593; AAA ATPase.
Interpro; IPR004663; Pept S16 Archaea.
Interpro; IPR001984; Pept T46.C.
Interpro; IPR001984; Pept T488e_S16.
Pfam; PP05562; Lon C; 1.
PRINTS; PR00830; ENDOLAPTASE.
InterPro; IPR008994; Nucleic_acid_OB
          InterPro; IPR004364; tRNA-synt_2.
InterPro; IPR003312; tRNA-synt_asp.
InterPro; IPR004365; tRNA_anti.
InterPro; IPR006195; tRNA_ligase_II.
Pfam; PF00152; tRNA-synt_2; 1.
Pfam; PF01336; tRNA_anti; 1.
                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=20479972; PubMed=11029001;
                                                                                                                                                                                                                                    |:|||:| : :|:||
204 KRTFLTVSGQLHIESYA 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; AL445066; CAC12209.1; -.
                                                                                                                                                                                                                                                                                                                                   16-OCT-2001 (Rel. 40, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              525 B
                                                                                                                                                                                                                       4 KKTFLSVHEVMAVENYA 20
                                                                                                                                                                                                                                                                                                                                                                                                Thermoplasma acidophilum.
                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              525
657 AA;
                                                                                                                                   Complete proteome. SEQUENCE 466 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEROPS; S16.005;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN=DSM 1728;
                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=2303;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    acidophilum."
                                                                                                                                                                                                                                                                                                           THEAC
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SEQUENCE
                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                     TA1081.
                                                                                                                                                                                                                                                                                               CON1_THEAC
                                                                                                                                                                                                                                                                                  RESULT 10
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8
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Bloecher R., Capesius I.;

"The systematic position of the Hypoptergiaceae (Bryopsida) inferred
"The systematic position of the Hypoptergiaceae (Bryopsida) inferred
"The systematic position of the Hypoptergiaceae (Bryopsida) inferred
"Trom rps4 gene sequences.";

Cryptogam. Bryol. 23:191-207(2002).

-!- FUNCTION: One of the primary rRNA binding proteins, it binds
directly to los rRNA where it nucleates assembly of the body of
the 30S subunit (By similarity).

-!- FUNCTION: With S5 and S12 plays an important role in translational
accuracy (By similarity).

-!- FUNCTION: With S5 and S12 plays an important role in translational
coloracy (By similarity).

-!- FUNCTION: With S5 and S12 plays an important role in translational
coloracy (By similarity).

-!- FUNCTION: With S5 and S12 plays an important role in translational
coloracy (By similarity).

-!- FUNCTION: With S5 and S12 plays an important role in translational
coloracy (By similarity).

-!- FUNCTION: With S5 and S12 plays an important role in translational
coloracy (By similarity).

-!- FUNCTION: With S5 and S12 plays an important role in translational
coloracy (By similarity).

-!- FUNCTION: With S5 and S12 plays an important role in translational
coloracy (By similarity).

-!- FUNCTION: With S5 and S12 plays an important role in translational
coloracy (By similarity).

-!- FUNCTION: With S5 and S12 plays an important role in translational
coloracy (By similarity).

-!- FUNCTION: With S5 and S12 plays an important role in translational
coloracy (By similarity).

-!- FUNCTION: With S5 and S12 plays an important role in translational
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                                                                                                                                                                                                                                                                                                                                                                                 Bukaryota: Viridiplantae; Streptophyta; Embryophyta; Bryophyta;
Bryopsida; Bryidae; Hookeriales; Hookeriaceae; Hookeria.
NCBL_TaxID=65539;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ribosomal protein, RWA-binding, rRNA-binding, Chloroplast. DOMAIN 90 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C77BDB4670E62D5A CRC64;
                                                                                   28-FEB-2003 (Rel. 41, Created)
28-FEB-2003 (Rel. 41, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
PRT; 202 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HAMAP; MF_01306; -; 1.
InterPro; IPR001912; Ribosomal_S4.
InterPro; IPR005709; Ribosomal_S4_b/o.
InterPro; IPR002942; S4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           entities requires a license agreement
                                                                                                                                                                                                                                  Chloroplast 30S ribosomal protein S4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PEGM; PF00163; Ribosomal_S4; 1.
Pfam; PF01479; S4; 1.
SMART; SW00363; S4; 1.
TRARTS, TIGRO1017; rpsD_bact; 1.
PROSITE; PS00632; RIBOSOWAL_S4; 1.
PROSITE; PS00899; S4; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |: | | ::|:: || |::
182 RESTGLKINELLVVEYYSR 200
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STANDARD;
                                                                                                                                                                                                                                                                                                                                     Hookeria lucens (Moss).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rissuE=Gametophyte;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
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RESULT 12

Score 42; DB 1; Length 657; Pred. No. 30;

38.2%;

Query Match Best Local Similarity

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                                                                               between the Swiss Institute of Bioinformatics and the EMBL outstation -
the Buropean Bioinformatics Institute. There are no restrictions on its
use by non-profit institutions as long as its content is in no way
modified and this statement is not removed. Usage by and for commercial
entities requires a license agreement (See http://www.isb-sib.ch/announce/
or send an email to license@lsb-sib.ch).
                                                     This SWISS-PROT entry is copyright. It is produced through a collaboration
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MEDLINE-22297718; PubMed-12219091;
Akman L., Yamashita A., Watanabe H., Oshima K., Shiba T., Hattori M.,
Aksoy S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10-OCT-2003 (Rel. 42, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
Asparaginyl-tRNA synthetase (EC 6.1.1.22) (Asparagine--tRNA ligase)
                                                                                                                                                                                                                                                                                                                      Wigglesworthia glossinidia brevipalpis.
Bacteria, Proteobacteria, Gammaproteobacteria, Enterobacteriales,
Enterobacteriaceae, Wigglesworthia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 1; Length 1056;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 42.5;
Pred. No. 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               770 KTFLDEH-VSAVNNLTKD 786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22
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10-OCT-2003 (Rel. 42, Last sequ
10-OCT-2003 (Rel. 42, Last anno
                                                                                                                                                                                                                                                                                                      EMBL; AC006921; AAD21445.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; AB063521; BAC24409.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           38.6%;
61.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5 KTFLSVHEVMAVENYAKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 61.10.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HAMAP; MF_00534; -; 1.
InterPro; IPR004522; AsnS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ASNS OR WIGBR2630.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=36870;
SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SYN WIGBR
Q8DZU1;
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STRAIN=cv. Columbia;
MEDLINE=20083487; PubMed=10617197;
MEDLINE=20083487; PubMed=10617197;
MEDLINE=20083487; PubMed=10617197;
Fujii C.Y., Mason T.M., Bowman C.L., Barnstead M.E., Feldblyum T.V., Bueji C.Y., Mason T.M., Bowman C.L., Barnstead M.E., Feldblyum T.V., Morjat K.S., Cronin L.A., Shen M., Pavi G., Van Aken S., Umayam L., Moffat K.S., Cronin L.A., Shen M., Pari G., Van Aken S., Umayam L., Goodman H.M., Somerville C.R., Copenhaver G.P., Preuss D., Nierman W.C., White O., Eisen J.A., Salzberg S.L., Fraser C.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Spermatophyta, Magnoliophyta; eudicotyledons, core eudicots, rosids, eurosids II; Brassicales; Brassicaceae; Arabidopsis.
NCBI_TaxID=3702,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nature 402:761-768(1999).
-!- FUNCTION: Responsible for microtubule translocation. May be important for the organization of phragmoplast-specific arrays microtubules (By similarity).
-!- SUBCELLULAR LOCATION: Microtubule-associated (By similarity).
-!- SIMILARITY: BELONGS TO THE KINESIN-LIKE PROTEIN FAMILY. BIMC
                                                                                                                                                 MODULE 1. MODULE 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C-LINKED (MAN) (PARTIAL).
C-LINKED (MAN) (PARTIAL).
N-LINKED (GLCNAC. . .) (POTENTIAL).
C-LINKED (MAN) (PARTIAL).
C-LINKED (MAN) (PARTIAL).
C-LINKED (MAN) (PARTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N-LINKED (GLCNAC. .) (POTENTIAL)
E -> A (in allotype C6 B).
/FTId=VAR_006056.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ñ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 42.5; DB 1; Length 934;
                                                                                                                                           COMPLEMENT CONTROL FACTOR I COMPLEMENT CONTROL FACTOR I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5; Indels
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                            TSP TYPE-1 3.
C5B-BINDING DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16-0CT-2001 (Rel. 40, Created)
16-0CT-2001 (Rel. 40, Last sequence update)
16-0CT-2001 (Rel. 40, Last annotation update)
16-0CT-2001 (Rel. 40, Last annotation update)
Probable 125 kDa kinesin-related protein.
ATGGSCO0 OR F2H17.19.
Arabidopsis thaliana (Mouse-ear cress).
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                                                                                                                                                                                                                                                                                                BY SIMILARITY.
C-LINKED (MAN)
                                                                                                                                                                                                                                       SIMILARITY.
SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No. 36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6; Mismatches
                                                                                                                                                                                                             SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           : :|::||| | : |||| 331
309 KDSSFIRIHKVMKVLNFTTKAKD 331
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MEDLINE=22388257; PubMed=12477932;

MEDLINE=22388257; PubMed=1.4., Grouse L.H., Derge J.G.,

Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

MEDLINE=2888257; PubMed=1.4., May S. I., Wang J., Hasteh F.,

MEDLINE=288825. May Soares M.B., Ronaldo M.F., Casavant T.L., Scheetz T.E.,

MEDLINE=288825. Mallano L.M., Peters G.J., Abramson R.D., Mullahy S.J.,

MEDRINESSA, Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

MILISON D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,

Rahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,

Milting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,

Makesley R.W., Touchman J.W., Green E.D., Dickson M.C.,

Medriguez A.C., Grimwood J., Schmutz J., Myers R.M.,

Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,

Medriguez A.C., Grimwood J., Schmutz J., Myers R.M.,

Butterfield Y.S.N., Krzywinski M.I., Salsku U., Smailus D.E.,

Medeneration and initial analysis of more than 15,000 full-length
                                                                                                                                            SEQUENCE FROM N.A., AND SEQUENCE OF 22-31 AND 633-640.
MEDLINES-9003-6879; Pubmed=2806353;
Haefliger J.-A., Tschopp J., Vial N., Jenne D.B.;
"Complete primary structure and functional characterization of the sixth component of the human complement system. Identification of the C5b-binding domain in complement C6.";
J. Biol. Chem. 264:18041-18051(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE OF 1-491 FROM N.A.

MEDLINE=89202413; PubMed=2468158;
Chakravarti D.N., Chakravarti B., Parra C.A., Mueller-Eberhard H.J.;
"Structural homology of complement protein C6 with other
channel-forming proteins of complement.";
Proc. Natl. Acad. Sci. U.S.A. 86:2799-2803(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CARBOHYDRATE-LINKAGE SITES.
MEDLINE=20020247; Pubmed=10551839;
Hofsteenge J., Blommers M., Hess D., Furmanek A., Miroshnichenko O.;
                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
NCBI TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VARIANT ALLOTYPES C6 A AND C6 B.
MEDLINES-93326186; PLÜMEd-81014441,
Dewald G., Nothen M.M., Cichon S.;
"Polymorphism of human complement component C6: an amino acid
substitution (Glu/Ala) within the second thrombospondin repeat
differentiates between the two common allotypes C6 A and C6 B.";
Biochem. Biophys. Res. Commun. 194:458-464(1993).
                                                                                                                                                                                                                                                                            MEDLINE-89380223; PubMed=2789218;
Disciplo R.G., Hugli T.E.;
The molecular architecture of human complement component C6.";
J. Biol. Chem. 264:16197-16206(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             human and mouse cDNA sequences.";
Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
01-JAN-1990 (Rel. 13, Created)
01-AUG-1991 (Rel. 19, Last sequence update)
15-MAR-2004 (Rel. 43, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                            Hobart M.J., Fernie B., Discipio R.G., "Structure of the human C6 gene.";
Biochemistry 32:6198-6205(1993).
                                            Complement component C6 precursor.
                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=93291175; PubMed=8512929;
                                                                          Homo sapiens (Human)
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MEDLINE=21016719; PubMed=11130712;

MEDLINE=21016719; PubMed=11130712;

MEDLINE=21016719; PubMed=11130712;

MINTEO C., Alongo G., Altafi H., Araujo R., Bowman C.L., Brooks S.Y.,

White O., Alongo G., Chan H., Cheuk R.F., Chin C.W.,

Buehler E., Chan A., Chao Q., Chen H., Cheuk R.F., Chin C.W.,

Chung M.K., Conn L., Conway A.B., Cornway A.R., Creasy T.H., Dewar K.,

Dunn P., Etgu P., Feldblyum T.V., Feng J.-D., Fong B., Fujii C.Y.,

A dill J.E., Goldsmith A.D., Haas B., Hansen N.F., Hughes B., Huizar L.,

Hunter J.L., Jenkins J., Johnson-Hopson C., Khan S., Khaykin E.,

Langin-Hooper S., Lee A., Lee J.M., Leaz C.A., Li J.H., Li Y.-P.,

Langin-Hooper S., Liu Z.A., Luros J.S., Maiti R., Marziali A.,

Lin X., Liu S.X., Liu Z.A., Luros J.S., Maiti R., Marziali A.,

Militscher J., Miranda M., Nguyen M., Neoney T., Rowley D.,

Sakano H., Salzberg S.L., Schwartz J.R., Shinn P., Southwick A.M.,

Pai G., Peterson J., Tambunga G., Toriumi M.J., Town C.D.,

Wu Utterback T., Van Aken S., Vaysberg M., Vysotskaia V.S., Walker M.,

"Let J., Let J., Van L., Van L., Charler J.C., Davis R.W.;

"Let D., Tambunga G., Toriumi M.J., Town C.D.,

Wu D., Yu G., Fraser C.M., Venter J.C., Davis R.W.;

"Let J., Liu S., Vaysberg M., Yopotskaia V.S., Walker M.,

"Let J., Liu S., Vaysberg M., Yopotskaia V.S., Walker M.,

"Let J., Liu S., Vaysberg M., Yopotskaia V.S., Walker M.,

"Let J., Liu S., Vaysberg M., Potskaia V.S., Walker M.,

"Let J., Tambunga G., Toriumi M.J., Town C.D.,

"Let J., Tambunga G.,
                                                                                                                                                                                                                                                                                                                                                           Arabidopsis thaliana (Mouse-ear cress).
Bukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, eudicotyledons, core eudicots, rosids,
eurosids II; Brassicales, Brassicaceae, Arabidopsis.
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                                                                                                                                                                                                                  10-OCT-2003 (Rel. 42, Created)
10-OCT-2003 (Rel. 42, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
Putative LOB domain protein 2.
LBD2 OR ATIG06280 OR F9P14.14.
                                                                                                                                                                  205 AA
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2; Mismatches
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-1- SIMILARITY: Contains 1 LOB domain.
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P13671;
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                                                                                                            RESULT 6
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                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lsb-sib.ch).
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Submitted (JUN-1996) to the EMBL/GenBank/DDBJ databases.
--- CATALYTIC ACTIVITY: Orotidine 5'-phosphate = UMP + CO(2).
--- PATHWAY: Pyrimidine biosynthesis; sixth (last) step.
--- SUBUNIT: Homodimer (by similarity).
---- SIMILARITY: Belongs to the OMP decarboxylase family. Subfamily 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacteria; Proteobacteria; Gammaproteobacteria; Pseudomonadales;
Pseudomonadaceae; Pseudomonas.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          40.5%; Score 44.5; DB 1; Length 235; 50.0%; Pred. No. 3.7; ive 1; Mismatches 6; Indels 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROTON DONOR (BY SIMILARITY).
B5DB591AE0084378 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        39.1%; Score 43; DB 1; Length 394; 36.8%; Pred. No. 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Lorenz D., Sokatch J.R.;
Submitted (AUG-1992) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-JUL-1993 (Rel. 26, Created)
01-JUL-1993 (Rel. 26, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Hypothetical 44.7 kDa protein in lpd-3 5'region (ORF3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     394 AA; 44656 MW; 8CD61FE9495302AF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                  HAMAP; MF 01200; -; 1.
InterPro; IPR001754; OMPdecase.
Pfam; PF00215; OMPdecase; 1.
PROSITE; PS00156; OMPDECASE; 1.
Lyase; Decarboxylase; Pyrimidine biosynthesis.
NON TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     394 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 QARKKTFLSV-----HEV-MAVENYAK 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               58 QARKKVFFDMKLLDIDHTVARAVENIAK 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
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InterPro, IPR003333, CMAS.
InterPro, IPR001601; Methyltransf.
InterPro, IPR000051; SAM_bind.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    235 AA; 25093 MW;
                                                                                                                                                                                                                                                                                                                                                                                     EMBL; U57689; AAB02248.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity 50.0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                68
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN=G2;
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ACT SITE
SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 5
YLP3_PSEPU
ID _YLP3_PSE1
AC P31049;
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Matches

ઠ 셤

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Gaps

1;

Indels

7;

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**MEDLINE=9840146; PubMed=9731193;

A Gates A.C., Wollberg P., Achen M.G., Wilks A.F.;

Cates A.C., Wollberg P., Achen M.G., Wilks A.F.;

Sampling the genomic pool of protein tyrosine kinase genes using the grampling treation with genomic DNA.";

Biochem. Biophys. Res. Commun. 249:660-667(1998).

-! FUNCTION: Essential for correct eye morphogenesis (ommatidial R7 neuron formation), this requires the Rasi/MAPK signal transduction pathway. May be involved in the regulaton of cytoskeleton organization and cell-cell contacts in developing ommatidia.

C-!- CATALITIC ACTIVITY: ATP + a protein tyrosine = ADP + protein tyrosine phosphate.

C-!- TISSUE SPECIFICITY: Ubiquitous in early embryos, in stages 13-16 and ventral ganglions. In larvae, expression is seen in visceral mesoderm, hindput, brain, anal pads and ventral ganglions. In larvae, expression is in CNS, wing disk, leg disk and photoreceptor precursors in the eye-antenna disks obstension increases during embryos expression is very low, expression increases during embryos expression is very low, controlled and pupped.
Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
Durbin K.J., Evangelista C.C., Ferraz C., Ferriera S., Fleischmann W.,
Poster C., Gabriellan A.E., Garg N.S., Gelbart W., Glasser K.,
Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
Harris N.L., Harvey D.A., Heiman T.J., Hernandez J.R., Houck J.,
A Jalali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A.,
Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
Liu X., Mattei B., McIntosh T.C., McLeod M.P., McPherson D.,
Merkulov G., Milshina N.V., Mobarry C., Morris J., McShrefi A.,
Mount S.M., Moy M., Murphy B., Murphy L., Muzny D.M., Nelson D.L.,
Reinert K., Remington K., Saunders R.D.C., Scheeler F., Shen H.,
She B.C., Siden-Kiames I., Simpson M., Strong R., Sun E.,
Shire B.C., Stadling A.C., Stadleton M., Strong R., Sun E.,
Shire R., Spradling A.C., Stapleton M., Strong R., Sun E.,
Shire R., Spradling A.C., Stapleton M., Strong R., Sun E.,
Williams S.M., Woodage T., Weinstcock G.M., Weissenbach J.,
Walliams S.M., Woodage T., Weiner C., Tan M., Zhong Y., Yang S., Yao Q., A.,
Zheng X.H., Zhong P.N., Zhong W., Zhou X., Zhu X., Smith H.O.,
RT Sience 287:2185-2195(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
STRAIN=Berkeley; TISSUB=Embryo;
STRAIN=22426066; PubWed=12537569;
Stapleton M., Carlson J.W., Brokstein P., Yu C., Champe M.,
George R.A., Guarin H., Kronmiller B., Pacleb J.M., Park S., Wan K.H.,
Rubin G.M., Celniker S.E.;
"A Drosophila full-length cDNA resource.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE OF 374-428 FROM N.A.
MEDLINE=92008631; PubMed=1915852;
Shishido E., Emori Y., Saigo K.;
"Identification of seven novel protein-tyrosine kinase genes of brosophila by the polymerase chain reaction.";
FEBS Lett. 289:235-238(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "A Drosophila full-length cDNA resource.";
Genome Biol. 3:RESEARCH0080.1-RESEARCH0080.8(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 376-427 FROM N.A.
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SIMILARITY: Belongs to the Tyr family of protein kinases. SRC

SIMILARITY: Contains 1 SH2 domain. SIMILARITY: Contains 1 SH3 domain.

subfamily.

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entities requires a license agreement (See http://www.isb-sib.ch/announce/
or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Orotidine 5'-phosphate decarboxylase (EC 4.1.1.23) (OMP decarboxylase)
(OMPDCase) (OMPdecase) (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                         GO; GO:0005912; C:adherens junction; IDA.
GO; GO:0004713; F:protein-tyrosine kinase activity; NAS.
GO; GO:0007154; P:cell communication; IDA.
GO; GO:0007155; P:cell communication; IDA.
GO; GO:0007169; P:transmembrane receptor protein tyrosine kin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Transferase; Tyrosine-protein kinase; Developmental protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bartonella bacilliformis.
Bacteria; Proteobacteria; Alphaproteobacteria; Rhizobiales;
Bartonellaceae; Bartonella.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A -> V (IN REF. 1).
V -> I (IN REF. 4 AND 5).
GNIVKI -> SNVVKM (IN REF. 4).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 45; DB 1; Length 517; Pred. No. 7.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1EF196E4D7AE61E9 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROTEIN KINASE.
ATP (BY SIMILARITY).
ATP (BY SIMILARITY).
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       235 AA
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                                                                                                                                                                                                                                                                                                                                                                                                                  PROSITE; PS00107; PROTEIN KINASE ATP; 1.
PROSITE; PS50011; PROTEIN KINASE DOM; 1.
PROSITE; PS00109; PROTEIN KINASE TYR; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SH2 domain; SH3 domain.
                                                                                                                                                                                                             InterPro; IPR001919; Prot Kinase. InterPro; IPR001980; SH2. InterPro; IPR001980; SH2. InterPro; IPR001980; SH2. InterPro; IPR001945; SH3. InterPro; IPR0019245; SH3. InterPro; IPR001245; Tyr pkinase. InterPro; IPR001245; Tyr pkinase. InterPro; IPR00169; pkinase; 1. Ffam; Pr00169; pkinase; 1. Ffam; Pr0018; SH3; 1. Frants; Pr0018; SH3; 1. Frants; Pr00401; SH3DOMAIN. PRINTS; Pr00109; TYRINASE. ProDom; P0000001; Prot kinase; 1. ProDom; P0000001; Prot kinase; 1.
                                                                                                                                                                                                                                                                           pkinase AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     192 ARRITFRILOEL--VEHYSKD 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 ARKKTFLSVHEVMAVENYAKD 22
                                                         AE003784; AAM68337.1; -. AY058652; AAL13881.1; -.
                                                                                    EMBL; S55977; AAB19907.1; -.
EMBL; AJ002911; CAA05746.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  59069 MW;
                                                                                                                 HSSP; P00523; 1SRL.
FlyBase; FBgn0004603; Src42A.
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Best Local Similarity 47.6%;
Matches 10; Conservative
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Upeslacis E., Ihler G.M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PS50002; SH3; 1
                                                                                                                                                                                                                                                                                                                                                                                        ProDom; PD000093; SH2; 1
ProDom; PD000066; SH3; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   381 3
517 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              PS50001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=774;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATP-binding;
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NP BIND
BINDING
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                            modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
      is in no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                    CYSTATIN 11.
SECONDARY AREA OF CONTACT (POTENTIAL).
BY SIMILARITY.
BY SIMILARITY.
MY-LINERD (GLCNAC. ..) (POTENTIAL).
Missing (in isoform 2).
/FIId=YSP_001260.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hayashizaki Y.; "Functional annotation of a full-length mouse cDNA collection.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%; Score 110; DB 1; Length 137; 100.0%; Pred. No. 1.1e-11;
   institutions as long as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Indels
                                                                                                                                                                                                      HSSP; P01038; 1A90.
Genew; HGNC:15959; CST11.
InterPro: PPR00010; Cystatin.
Pfam; PF0001; Cystatin; 1.
SMART; SM00043; CY: 1.
PROSITE; PS00287; CYSTATIN; FALSE NEG.
Thiol protease inhibitor; Signal; Alternative splicing.
SIGNAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CS85C8C39A585C3B CRC64;
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    -!- SIMILARITY: Belongs to the cystatin family.

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(Rel. 41, Last sequence update)
(Rel. 42, Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
STRAIN=C57BL/6J; TISSUE=Epididymis;
MEDLINE=21085660; Pubmed=1121851;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 QARKKTFLSVHEVMAVENYAKD 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          24 QARKKTFLSVHEVMAVENYAKD 45
                                                                                                                                                EMBL; AL096677; CAC13170.1; -. EMBL; AL096677; CAC17423.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       137 AA; 16375 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity 100.
Les 22; Conservative
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79
101
134
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CST11.
   non-profit
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=10090;
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10-OCT-2003
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Q9D269;
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OS MUSS mus must
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A Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
A Adams M.D., Celniker S.E., Ii P.W., Hoskins R.A., Galle R.F.,
A George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
A Sutron G.G., Nortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
A Bandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
A Abril J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D.,
B Ballew R.M., Basu A., Baxendale J., Baytaktaroglu L., Beasley E.M.,
A Borkova D., Botchan M.R., Bouck J., Brandari D., Bolahakov S.,
A Borkova D., Botchan M.R., Bouck J., Brokstein P.,
Buttis K.C., Busam D.A., Buller H., Cadieu E., Center A., Chandra I.,
A Cawley S., Dahlke C., Davenport L.B., Davies P.,
A de Pablos B., Delcher A., Deng Z., Mays A.D., Dew I., Dietz S.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                 CYSTATIN 11.
SECONDARY AREA OF CONTACT (POTENTIAL).
SYSTMLARITY.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A., FUNCTION, TISSUE SPECIFICITY, AND DEVELOPMENTAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN=Canton-S; TISSUE=Pupae;
MEDLINE=96268448; PubMed=8682295;
Takahashi F., Endo S., Kojima T., Saigo K.;
"Regulation of call-cell contacts in developing Drosophila eyes by Dsrc41, a new, close relative of vertebrate c-src.";
Genes Dev. 10:1645-1656(1996).
                                                                                                                                                                                                                                                                                                                                                                    .) (POTENTIAL)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drosophila melanogaster (Fruit fly).
Bukaryota, Metazoa, Arthropoda, Hexapoda, Insecta, Pterygota,
Neoptera, Endopterygota, Diptera, Brachycera, Muscomorpha,
                                                                                                                                                                                                                                                                                                                                                                                                                    Score 53; DB 1; Length 139;
Pred. No. 0.071;
                                                                                                                                                                                                                                                                                                                                                                    134 N-LINKED (GLCNAC. . .) (PC 16217 MW; F228D9815FA32640 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          517 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                     40.9%; Pred. ...
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                                                                                                                                                                                                                                                                               POTENTIAL.
                                                                                                                                                                        MGD; MGI:1925490; Cstll.
InterPro; IPR000010; Cystatin.
Pfam; PF00031; Cystatin; 1.
SMART; SM00043; CY; 1.
PROSITE; PS00287; CYSTATIN; FALSE_NEG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 QARKKTFLSVHEVMAVENYAKD 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               25 QVKRKTFIRIEBVSALESSVKE 46
                                                                                                                                                                                                                                                              Thiol protease inhibitor, Signal
                                                                                                                                       EMBL; AKO20300; BAB32061.1; -. HSSP; P01034; 1G96.
                                                                                                                                                                                                                                                                                                                                                                                                                        48.28;
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Matches 9, Conservative
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102
135
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134
139 AA;
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GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
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OM protein - protein search, using sw model

March 18, 2004, 14:02:50 ; Search time 2.61905 Seconds (without alignments) 437.389 Million cell updates/sec Run on:

US-09-941-314-5 110 1 QARKKTFLSVHEVMAVENYAKD 22 Title: Perfect score: Sequence:

Scoring table:

141681 seqs, 52070155 residues BLOSUM62 Gapop 10.0 , Gapext 0.5 Searched:

141681 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

SwissProt_42:* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

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	Description		mus m		Q44843 bartonella		Q91nb9 arabidopsis																£	ซ	Q91qt2 a replicase	g						aquifex	¥	Q87a82 xylella fas
SUMMARIES	ID	CS11_HUMAN	CS11_MOUSE	SR42_DROME	PYRF BARBA	YLP3_PSEPU	LBD2 ARATH	CO6_HUMAN	K125_ARATH	SYN_WIGBR	LON1_THEAC	RR4 HOOLU	RR4_RICNA	GSHR HAEIN	SPED_PSEAE	GSBP_CHICK	FRI2_SOYBN	LB22_ARATH	YZ51_MYCTU	SUCD_METJA	SUCB_NEOFR	Y048_UREPA	UB24_HUMAN	R1AB_IBVB	R1AB_IBVBC	SPED_PSESM	RR4_HYPLA	COBJ_METJA	YGR1_YEAST	DHGY_CUCSA	DXR_PHOLL	AROA_AQUAE	SYN_XYLFA	SYN_XYLFT
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	Query Match Length	137	139	517	235	394	205	934	1056	466	657	202	202	456	264	508	257	268	292	294	437	496	977	6629	6629	264	202	249	310	382	398	431	466	466
de	Query Match	100.0	48.2	40.9	40.5	39.1	38.6	38.6	38.6	38.2	38.2			7	36.8	36.8	36.4	36.4	36.4	36.4	36.4	36.4	36.4	36.4	36.4	35.9			35.5	35.5			35.5	35.5
	Score	110	53	45	44.5	43	42.5	42.5	42.5	42	42	41	41	41	40.5	40.5	40			40		40	40	40	4				39					
	Result No.	-	7	3	4	S	ø	7	80	6	10	11	12	13	14	15	16	17	18	19	50	21	22	23	24	25	56	27	28	29	30	31	32	33

Q42881 lycopersico O14815 homo sapien P40361 saccharomyc Q2734 drosophila P74918 thermococcu P29498 schistosoma Q98118 arabidopsis P59151 woodwardia Q9814C1 arabidopsis P06358 marchantia Q9814C3 plagiochasm	Q39056 arabidopsis
1A13 LYCES CAN9 HUMAN VAH0 YEAST RYKI DROME DPOL THEFM FABP SCHM FABP SCHM RR4 WORA RR4 WARPO PLARP	CNX3_ARATH
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ALIGNMENTS

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A; Accession: H84777

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RESULT 15
D90026
hypothetical protein [imported] - Staphylococcus aureus (strain N315)
C;Species: Staphylococcus aureus
C;Species: Staphylococcus aureus
C;Date: 10-May-2001 #text_change 22-Oct-2001
C;Accession: D90026
R;Kuroda, M.; Ohta, T.; Uchiyamai, I.; Baba, T.; Yuzawa, H.; Kobayashi, I.; Cui, L.; Oguc
Ma, A.; Mizutani-Ui, Y.; Kobayashi, N.; Bawano, T.; Inoue, R.; Katio, C.; Sekimizu, K.;
C.; Shiba, T.; Hattori, M.; Ogaswara, N.; Hayashi, H.; Hiramatsu, K.
Lancet 357, 1225-1240, 2001
A;Title: Whole genome sequencing of meticillin-resistant Stapylococcus aureus.
A;Reference number: A89758; MUID:21311952; PMID:11418146
A;Residues: 1-256 <KUR>
A;Experimental source: strain N315
C;Genetics:
A;Genetics:
                                                                                                                                                                                                                                                                                                                                  1;
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A/Status: preliminary
A/Molecule type: DNA
A/Residues: 1-1056 <STO>
A/Cross-references: GB:AE002093; NID:g4510356; PIDN:AAD21445.1; GSPDB:GN00139
A/Genetics:
A/Genetics: At2336200
A/Mop position: 2
C;Superfamily: kinesin-related protein Eg5; kinesin motor domain homology
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                                                                                                                                                                                                                                                                  Score 42.5; DB 2; Length 1056;
Pred. No. 1.3e+02;
0; Mismatches 6; Indels 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                        770 KTFLDEH-VSAVNNLTKD 786
                                                                                                                                                                                                                                                                                                                                                                                     5 KTFLSVHEVMAVENYAKD 22
                                                                                                                                                                                                                                                                  Query Match 38.6%;
Best Local Similarity 61.1%;
Matches 11; Conservative
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Search completed: March 18, 2004, 14:23:13 Job time: 5.23413 secs

| : || | |:| || 142 KDYADAHEEMVREHYQKD 159

5 KTFLSVHEVMAVENYAKD 22

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A; Reference number: A32109; MUID:89202413; PMID:2468158
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                                                                                                                                                                                                                                                                                                                                                                                                                       C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 31-Mar-2001
C;Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 31-Mar-2001
C;Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 31-Mar-2001
C;Accession: F86198
R;Theologis A.; Ecker, J.R.; Palm, C.J.; Federspiel, N.A.; Kaul, S.; White, O.; Alonso, Chin, C.W.; Chung, M.K.; Conn, L.; Conway, A.B.; Conway, A.R.; Creasy, T.H.; Dewar, K.; Mature 408, 816-820, 2000
A;Authors: Hunter, J.L.; Jenkins, J.; Johnson-Hopson, C.; Khan, S.; Khaykin, E.; Kim, C.C., Li, J.H.; Li, Y.; Lin, X.; Liu, S.X.; Liu, Z.A.; Luros, J.S.; Maiti, R.; Marziali, Rizzo, M.; Roney, T.; Rowley, D.; Sakano, H.
A;Authors: Salzberg, S.L.; Schwartz, J.R.; Shinn, P.; Southwick, A.M.; Sun, H.; Tallon, A;Reference and analysis of chromosome 1 of the plant Arabidopsis.
A;Reference number: A86141; MUID:21016719; PMID:11130712
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complement C6 precursor [validated] - human

c;Species Hemo sapiens (man)

C;Species 10-Sep-1999 #sequence revision 10-Sep-1999 #text_change 17-Nov-2000

C;Accession: A34372; A34235; A32109; A31894; A53072

C;Accession: A34372; A34235; A32109; A31894; A53072

C;Accession: A34372; A34235; A31894; A53072

A;Haefijger, J.A., Tschopp, J.; Yaal, N.; Jenne, D.E.

J. Biol. Chem. 264, 18041-18051, 1989

A;Title: Complete primary structure and functional characterization of the sixth compone A;Reference number: A34372; MUID: 90036879; PMID: 2808363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Title: Structural homology of complement protein C6 with other channel-forming protein
A;Map position: 2
C;Superfamily: unassigned Ser/Thr or Tyr-specific protein kinases; protein kinase homolo
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Cross-references: GB: AE005172; NID: 98844133; PIDN: AAF80225.1; GSPDB: GN00141
C; Genetics:
                                                                                                                                                 Gaps
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A; Crose-references: GB:105024, NID:9187824; PIDN:AAA59668.1; PID:9307228
R; ChAkravarti, D.N.; Chakravarti, B: Parra, C.A.; Muller-Eberhard, H.J.
Proc. Natl. Acad. Sci. U.S.A. 86, 2799-2803, 1989
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                                                                                  Length 676;
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                                                                                                                                                                                                                                                                                                                                                                                                              hypothetical protein [imported] - Arabidopsis thaliana
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                                                                                     DB 2;
                                                                                  Score 43; DB 2
Pred. No. 66;
3; Mismatches
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                                                                                     39.1%;
50.0%;
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                                                                                                                Best Local Similarity 50.0
Matches 8; Conservative
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Best Local Similarity
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A; Residues: 1-205 <STO>
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                                                                                        Query Match
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A;Cross-references: Gs:704506; NID:g618465; PIDN:AAB59433.1; PID:g618466
R;Chakravarti, D.N.; Muller-Eberhard, H.J.
J. Biol. Chem. 263, 18306-18312, 1988
A;Tile: Biochemical characterization of the human complement protein C6. Association wit A;Reference number: A31894; MulD:89054009; PMID:3192535
A;Accession: A31894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Accession: A53072
A;Accession: A53072
A;Gtatus: nucleic acid sequence not shown; not compared with conceptual translation
A;Molecule type: DNA
A;Residues: 'GPGGSQG',1-47,'A',49-118,'E',120-561,'A',563-618,'A',620-700,'A',702-763,'A'
A;Coss-references: GB:X72177; NID:9312783; PIDN:CAA50994.1; PID:9825633
A;Mote: sequence extracted from NCEI backbone (NCBIP:134071); this sequence was incorrect single-letter code interpreted splice boundary codons written in three-letter code shift should be sequence. J; Blommers, M; Hess, D; Furmanek, A.; Miroshnichenko, O.
J. Biol. Chem. 274, 32786-32794, 1999
A;Title: The four terminal components of the complement system are C-mannosylated on mult
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A Pathway: complement pathway

C/Superfamily: complement cf, complement factor H repeat homology; EGF homology; LDL rece
C/Superfamily: complement alternate pathway; complement pathway; cytolysis; glycoprotein; me
F;1-21/Domain: aignal sequence #status predicted <81G>
F;22-934/Product: complement C6 #status experimental <MAT>
F;22-934/Product: complement C6 #status experimental <MAT>
F;80-134/Domain: thrombospondin type I repeat homology <THRI>
F;80-134/Domain: LDL receptor ligand-binding repeat homology <LDL>
F;21-552/Domain: EGF homology <EGF>
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F;324,855/Binding site: carbohydrate (Asn) (covalent) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Riin, X.; Kaul, S.; Rounsley, S.D.; Shea, T.P.; Benito, M.I.; Town, C.D.; Fujii, C.Y.; h.M.; Koo, H.; Moffat, K.S.; Cronin, L.A.; Shen, M.; VanAken, S.E.; Umayam, L.; Tallon, L.; Euses, D.; Nierman, W.C.; White, O.; Eisen, J.A.; Salzberg, S.L.; Fraser, C.M.; Venter, J. Nature 402, 761-768, 1999
A;Title: Sequence and analysis of chromosome 2 of the plant Arabidopsis thaliana.
A;Reference number: A84420; MUID:20083487; PMID:10617197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A,Description: as a component of the complement C5b-8 complex, assists in the polymerizat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Note: identification and location of C-mannosylation sites by mass-spectroscopy
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C;Date: 02-Feb-2001 #sequence_revision 02-Feb-2001 #text_change 17-May-2002
C;Accession: H84777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Map position: 5p13-5p13
C;Complex: combines with C5b to form the complement C5b-6 complex
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 42.5; DB 1; Length 934; Pred. No. 1.1e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Reference number: A59362; MUID:20020247; PMID:10551839 A;Contents: annotation
                                                                                                                                                                                                                                                                                                                                                            A,Accession: A31894
A,Molecule type: protein
A,Residues: 22-41 <CHA>
R;Hobart, M.J.; Fernie, B.; DiScipio, R.G.
Bjochemistry 32, 6198-6205, 1993
A,Title: Structure of the human C6
A,Reference number: A53072; MUID:93291175; PMID:8512929
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39.1%;
                                                                                 A; Residues: 1-118, 'E', 120-491
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Best Local Similarity
Accession: A32109
Molecule type: mRNA
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C;Accession: G96995
R;Nolling, U.; Breton, G.; Omelchenko, M.V.; Markarova, K.S.; Zeng, Q.; Gibson, R.; Lee,
; Dally, M.J.; Bennett, G.N.; Kononin, B.V.; Smith, D.R.
J. Bacteriol. 183, 4823-4838, 2001
A;Title: Genome Sequence and Comparative Analysis of the Solvent-Producing Bacterium Clos
A;Reference number: A96900; MUID:21359325; PMID:21359325
A;Accession: G96995
A;Status: preliminary
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                                                                                                                                                                                                                                                                                                     A;Cross-references: EMBL:U40800; NID:g1065946; PID:g1065948; PIDN:AAA81490.1; CESP:D2096 C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATP-dependent RNA helicase, superfamily II [imported] - Clostridium acetobutylicum
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A;Accession: G84663
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A,Residues: 1-585 <KUR>
A;Cross-references: GB:AE001437; PIDN:AAK78754.1; PID:g15023664; GSPDB:GN00168
A;Experimental source: Clostridium acetobutylicum ATCC824
C;Genetics:
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C;Species: Caenorhabditis elegans
C;Date: 20-Sep-1999 #sequence_revision 20-Sep-1999 #text_change 20-Sep-1999
C;Accession: T15892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               hypothetical protein At2g26700 [imported] - Arabidopsis thaliana C;Species: Arabidopsis thaliana (mouse-ear cress) C;Date: 02-Feb-2001 #sequence_revision 02-Feb-2001 #text_change 19-Jul-2002 C;Accession: G84663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C;Species: Clostridium acetobutylicum
C;Date: 14-Sep-2001 #sequence_revision 14-Sep-2001 #text_change 14-Sep-2001
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                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 467;
                                                                                         RiGeisel, C. submitted to the EMBL Data Library, November 1995
A; Description: The sequence of C. elegans cosmid D2096, A; Reference number: Z18425
A; Accession: T15892
A; Status: preliminary; translated from GB/EMBL/DDBJ
A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                    39.1%; Score 43; larity 53.3%; Pred. No. Conservative 3; Mismatcl
                                                                                                                                                                                                                                                                                                                                                              A;Gene: CESP:D2096.4
A;Introns: 31/1; 70/2; 122/2; 239/2; 336/3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               166 ARRGVYLSPLRILALENFEK 185
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155 KLMLDGHEVIALDNY 169
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 39.1
Best Local Similarity 40.0
Matches 8; Conservative
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Matches 8; Conserv
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A;Molecule type: DNA
A;Residues: 1-676 <STO>
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A;Gene: At2g26700
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tyroosyl-tRNA synthetase NWB1835 [imported] - Neisseria meningitidis (strain MC58 serogre C; Species: Neisseria meningitidis
C; Species: Naisseria meningitidis
C; Date: 31-Mar-2000 #sequence_revision 31-Mar-2000 #text_change 19-Jan-2001
C; Accession: AB1037
R; Tettellin, H.; Saunders, N.J.; Heidelberg, J.; Jeffries, A.C.; Nelson, K.E.; Eisen, J.A. Hickey, E.K.; Haft, D.H.; Salzberg, S.L.; White, O.; Fleischmann, R.D.; Dougherty, B.A.; ri, H.; Olin, H.; Vanathevan, J.; Gill, J.; Scarlato, V.; Masignani, V.; Pizza, M. Science 287, 1809-1815, 2000
A; Authors: Grandi, G.; Sun, L.; Smith, H.O.; Fraser, C.M.; Moxon, E.R.; Rappuoli, R.; Ve A; Maccession: AB1037
A; Fitle: Complete genome sequence of Neisseria meningitidis serogroup B strain MC58.
A; Reference number: AB1000; MUID:20175755; PMID:10710307
A; Scatus: preliminary
A; Molecule type: DNA
A; Residues: 1-431 < TET>
A; Cross-references: GB:AE002534; GB:AE002098; NID:97227095; PIDN:AAF42170.1; PID:9722709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A,Cross-references: GB:AE002534; GB:AE002098; NID:g7227095; PIDN:AAF42170.1; PID:g722709
A,Experimental source: serogroup B, strain MC58
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A, strain Z2491
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           39.1%; Score 43; DB 2; Length 431; 58.8%; Pred. No. 41; tive 3; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
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hypothetical protein D2096.4 - Caenorhabditis elegans
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                   4; Mismatches
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Mismatches
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Pred. No.
                                                                                                       328 KKVFKSLHNPTIIELYSKE 346
                                                                      4 KKTFLSVHEVMAVENYAKD 22
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A;Gene: tyrs; NMA0620
C;Superfamily: tyrosine-tRNA ligase
C;Keywords: ligase
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272 TFLSIEEIDAIE--AKD 286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C; Superfamily: tyrosine-tRNA ligase
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TFLSIEEIDAIE--AKD 286
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A;Cross-references: GB:AL162753;
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Best Local Similarity 58.8
Matches 10; Conservative
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                   Conservative
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Matches 10; Conserv
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                   Matches
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submitted to the EMBL Data Library, February 1997
A;Description: Isolation and characterization of seven serine/threonine protein kinase-er A;Reference number: 216191
A;Accession: TOT890
A;Accession: TOT890
A;Accession: TOT890
A;Accession: TOT800
A;Molecule type: mRNA
A;Residues: 1-102 <ZHA>
A;Cross-references: EMBL: U89682; NID:g2735253; PIDN:AAB93863.1; PID:g2735254
A;Experimental source: cultivar Rutgers; seedling
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Gene: PK5
C;Superfamily: unassigned Ser/Thr or Tyr-specific protein kinases; protein kinase homoloc
C;Keywords: phosphotransferase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 R.Tomb, J.F.; White, O.; Kerlavage, A.R.; Clayton, R.A.; Sutton, G.G.; Fleischmann, R.D., Peterson, S.; Loftus, B.; Richardson, D.; Dodson, R.; Khalak, H.G.; Glodek, A.; McKennes son, J.D.; Kelley, J.M.; Cotton, M.D.; Weidman, J.M.; Fujii, C.; Bowman, C.; Watthey, L. Matthey, L. Matthors: Wallin, E.; Hayes, W.S.; Borodovsky, M.; Karpk, P.D.; Smith, H.O.; Fraser, C.A.; Reference number: A64520; MulD:97394467; PMD:9252185
A; Reference number: A64520; MulD:9739467; PMD:9752185
A; Reference number: A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Cross-references: GB:AE000560; GB:AE000511; NID:g2313554; PIDN:AAD07516.1; PID:g231355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Cross-references: EMBL:Z79753; PIDN:CAB02084.1; GSPDB:GN00023; CESP:F20G2.4
A;Experimental source: clone F20G2
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    hypothetical protein HP0446 - Helicobacter pylori (strain 26695)
C;Species: Helicobacter pylori
C;Date: 09-Aug-1997 #sequence_revision 09-Aug-1997 #text_change 08-Oct-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              hypothetical protein F2002.4 - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 15-Oct-1999
C;Accession: T21166
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Match 39.1%; Score 43; DB 2; Length 102; Local Similarity 50.0%; Pred. No. 9.2; see 8; Conservative 3; Mismatches 5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          39.1%; Score 43; DB 2; Length 259; 53.8%; Pred. No. 24;
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submitted to the EMBL Data Library, September 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3; Mismatches
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A;Introns: 52/1; 87/2; 220/2; 318/2
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les 7; Conservative
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129 FLSMHDFTKIENY 141
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A; Accession: T21166
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A; Residues: 1-366 <WIL>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Residues: 1-766 AMAN-
A; Residues: 1-766 AMAN-
A; Residues: 1-766 A; Cross-references: ENBL:X91067; NID:9984177; PIDN:CAA62524.1; PID:9984180
A; Note: the nuclectide seques bummitted to the EMBL Data Library, August 1995
B; Mannhaupt, G; Vetter, I.; Schwarzlose, C; Mitzel, S; Feldmann, H.
B; Mannhaupt, G; Vetter, I.; Schwarzlose, C; Mitzel, S; Feldmann, H.
A; Reference number: S59285
A; Reference number: S59285
A; Reference number: S59285
A; Residues: 1-706 A; Reference EMBL:X91067; NID:9984177; PID:9984180
B; Feldmann, H.; Mannhaupt, G.; Vetter, I.
Bubmitted to the Protein Sequence Database, July 1996
A; Reference number: S66743
A; Reference number: S66752.
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                                                        A;Cross-references: GB:BA000008; NID:g8978945; PIDN:BAA98780.1; GSPDB:GN00142 A;Experimental source: strain J138 C;Genetics: A;Genet CPJ0574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Disciplie membrane protein YOLOGOC - yeast (Saccharomyces cerevisiae)
N;Alternate names: hypothetical protein 01216
C;Species: Saccharomyces cerevisiae
C;Species: Saccharomyces cerevisiae
C;Date: 27-Apr-1996 Heaquence revision 10-May-1996 #text_change 19-Apr-2002
C;Accession: S61717; S59287; S6752
R;Mannhaupt, G:; Vetter, I:; Schwarzlose, C.; Mitzel, S.; Feldmann, H.
Yeast 12, 67-76, 1996
A;Tile: Analysis of a 26 kb region on the left arm of yeast chromosome XV.
A;Reference number: S61715; MUID:96381248; PMID:8789261
A;Accession: S61717
A;Accession: S61717
A;Accession: S61717
A;Accession: MUID:96381248; PMID:8789261
A;Accession: MUID:96381248; 
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C;Species: Lycopersicon esculentum (tomato)
C;Species: Lycopersicon esculentum (tomato)
C;Date: 14-May-1999 #sequence_revision 14-May-1999 #text_change 09-Jun-2000
C;Accession: T07890
R;Zhang, S.; Diener, T.O.
                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
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44.4%; Pred. No. 32;
tive 3; Mismatches 7; Indels
                                                                                                                                                                                                                                                                                                                                 DB 2; Length 184
                                                                                                                                                                                                                                                                                                                                                                                                                             6; Indels
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F;66-82/Domain: transmembrane #status predicted <TMl>
F;151-167/Domain: transmembrane #status predicted <TM2>
F;178-194/Domain: transmembrane #status predicted <TM3>
                                                                                                                                                                                                                                                                                             48.2%; Sco...
55.0%; Pred. No. v...
3; Mismatches
                                                                                                                                                                                                                                                                                                                            Score 53; DB 2;
Pred. No. 0.39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3 RKKTFLSVHEVMAVENYAKD 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |||||||| | | | : | RKKTFLSSHRVLARPSFPVD 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    222 KTLVTLHRTMGVERLTKD 239
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Conservative
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A;Map position: 15L
                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity 55.09
Matches 11; Conservative
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nes 8; Conserv
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                              A, Residues: 1-184 <STO>
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Best Loc Matches

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GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on:

March 18, 2004, 14:06:15; Search time 4.23413 Seconds (without alignments) 499.799 Million cell updates/sec

US-09-941-314-5 110 1 QARKKTFLSVHEVMAVENYAKD Title: Perfect score:

22

Scoring table: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5

283366 segs, 96191526 residues

Searched:

283366 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

PIR 78:*
1: Dir1:*
2: Dir2:*
3: Dir3:*
4: Dir4:* Database

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	Description	pro	hypothetical prote	probable membrane	protein kinase (EC		hypothetical prote		probable tyrosine-	hypothetical prote	ATP-dependent RNA	hypothetical prote		complement C6 prec	probable kinesin-r	hypothetical prote	biotin synthesis B	3-oxoadipate CoA-t	zinc ABC transport	hypothetical prote	probable dihydrodi	type II restrictio	type IIS restricti	NADH oxidase (noxA	glutathione-disulf	hypothetical prote	hypothetical prote	chromatin remodell	S-adenosylmethioni	dolichyl-diphospho
SUMMARIES	QI 1	D72061	B86562	S61717								G84663	F86198	A34372	H84777	D90026	E84138		C86889		D83488							T18404	D83564	A30007
	Query Match Length DB			706 2		259 2			431 2	•	585 2	676 2	205 2	934 1	1056 2	256 2	271 2	•	280 2	•	305 2	•		•			1211 2		264 2	508
æ	Query	48.2	48.2	40.9	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	38.6	38.6	38.6	38.2	38.2	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3	36.8	36.8
	Score	53	53	45	43	43	43	43	43	43	43	43	42.5	42.5	42.5	42	42	41	41	41	41	41	41	41	41	41	41	41	40.5	40.5
	Result No.	-	7	m	4	S	9	7	80	σ	10	11	12	13	14	15	16	17	18	19	50	21	22	23	24	25	26	27	28	53

"Wypotherical protein CPj0574 [imported] - Chlamydophila pneumoniae (strain J138)
C;Species: Chlamydophila pneumoniae, Chlamydia pneumoniae
C;Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 02-Mar-2001
C;Accession: B86562
C;Accession: B86562
A;Shirai, M.; Hirakawa, H.; Kimoto, M.; Tabuchi, M.; Kishi, F.; Ouchi, K.; Shiba, T.; Ishinoleic Acids Res. 28, 2311-2314, 2000
A;Title: Comparison of whole genome sequences of chlamydia pneumoniae J138.
A;Title: Comparison of whole genome sequences of shlamydia pneumoniae J138.
A;Accession: B86562
A;Accession: B86562
A;Status: preliminary
A;Molecule type: DNA

RESULT 2 B86562

hypothetical prote	succinate-CoA liga	hypothetical prote	hypothetical prote	conserved hypothet	hypothetical prote	hypothetical prote	protein kinase-lik	probable protein k	hypothetical prote	genome polyprotein	hypothetical prote	2-haloalkanoic aci	precorrin-3 methyl	glutenin low molec	probable membrane
7.7	55	3.4	12	152	940	367	546	4179	164	182	36	53	01	980	160425
H70677	E64455	A90134	T199	D72252	E82940	D83367	T47	F84	T054	VFI	T32536	G90353	E64401	T06980	860
2 H706	2 E644	2 A9013	2 T199	2 D723	2 E82	2 D83	2 T47	2 F84	2 T054	1 VFI	2 T325	2 G903	2 E644	2 T069	2 860
73	294 2 E644	0	7	2	~	~	934 2 T47	N	~	H	~	~	7	2	7
292 2 H	294 2 E	387 2	414 2	426 2 I	496 2 1	662 2	934 2	949 2	1088 2	2652 1	169 2	~	7	2	7
292 2 H	294 2 E	387 2	414 2	426 2 I	496 2 1	662 2	~	949 2	~	2652 1	169 2	~	7	2	7
292 2 H	294 2 E	36.4 387 2	36.4 414 2	36.4 426 2 I	36.4 496 2 1	36.4 662 2	934 2	36.4 949 2	36.4 1088 2	2652 1	169 2	~	7	2	7

ALIGNMENTS

RESULT 1
D72061 hypothetical protein CP0175 [imported] - Chlamydophila pneumoniae (strains CWL029 and ARC
C;Species: Chlamydophila pneumoniae, Chlamydia pneumoniae C;Date: 23-Apr-1999 #sequence_revision 23-Apr-1999 #text_change 11-May-2000
C;Accession: D72061; A81606 R:Kalman. S.: Mitchell, W.: Marathe, R.: Lammel. C.: Fan. J.: Olinger, L.: Grimwood, J.;
Nature Genet. 21, 385-389, 1999
A;utte: Comparative genomes of clamydia pheumoniae and c. trachomatis. A;Reference number: A72000; MUID:99206606; PMID:10192388
A,Accession: D72061
A; Molecule type: DNA
A, Residues: 1-184 <arn></arn>
A; Cross-references: GB: AE001642; GB AE001363; NID: 94376865; PIDN: AAD18714.1; PID: 94376866
A A EXPEXIMENTIAL BOUTCE: BITAIN CHILUZA D. Dead T D . Brunham D C . Chan C . Gill C D . Harkey E
A, N. C. D. D. D. S. S. G. M. J. Nelson, W.; DeBoy, R.; Kolonay, J.; McClarty, G.; Salzberg, C.; C.; Dodson, R.; Gwinn, M.; Nelson, W.; DeBoy, R.; Kolonay, J.; McClarty, G.; Salzberg, C. C.; Dodson, R.; Gwinn, M.; Nelson, W.; DeBoy, R.; Kolonay, J.; McClarty, G.; Salzberg, C. C.; Dodson, R.; Gwinn, M.; Nelson, W.; DeBoy, R.; Kolonay, J.; McClarty, G.; Salzberg, C. C.; Dodson, R.; Gwinn, M.; Nelson, W.; DeBoy, R.; Kolonay, J.; McClarty, G.; Salzberg, C. C.; Martin, G.; M
Nucleic Acids Res. 28, 1397-1406, 2000
A,Title: Genome sequences of Chlamydia trachomatis MoPn and Chlamydia pneumoniae AR39.
A; Reference numbers: A81500; MUID:20150255; PMID:10684935
A.Status: preliminary
A; Molecule type: DNA
A;Residues: 1-184 <rea></rea>
A; Cross-references: GB: AE00218; GB: AE002161; NID: 97189099; PIDN: AAF38049.1; PID: 9718910:
A SAPETIMENTAL BOUTCE: BUTAIN ARSS, ND CELIB
A;Gene: CPn0574; CP0175
Query Match 48.2%; Score 53; DB 2; Length 184;
(*)
Qy 3 RKKTFLSVHEVMAVENYAKD 22

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Pred. No. 98;
3; Mismatches 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HILD REFERENCE: 084315/0160
CURRENT APPLICATION NUMBER: US/10/094,749
CURRENT FILING DATE: 2002-03-12
PRIOR PELLING DATE: 2002-01-24
PRIOR FILING DATE: 2001-01-24
PRIOR FILING DATE: 2001-09-14
NUMBER OF SEQ ID NOS: 3381
SEQ ID NO 3093
LENGTH: 542
                                                                                                                                                                                                                                                                                                                                                                                                  PPLICANT: YOSHIKAWA, TSUTOMU
PPLICANT: OTSUKA, MOTOVUKI
PPLICANT: NAGAHARI, KENJI
PPLICANT: MAGUHO, YASUHIKO
ITLE OF INVENTION: NOVEL FULL-LENGTH CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Search completed: March 18, 2004, 14:30:52
Job time : 13.3135 secs
                                       Sequence 3093, Application US/10094749
                                                                                                                      SUGIYAMA, TOMOYASU
OTSUKI, TETSUJI
WAKAMATSU, AI
SATO, HIROYUKI
                                                                                                                                                                                                          ISHII, SHIZUKO
YAMAMOTO, JUN-ICHI
ISONO, YUUKO
HIO, YURI
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105 KALLSVHDTVAQKNY 119
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Best Local Similarity 53.3%;
Matches 8; Conservative
                                                             US20030219741A1
                                                                                                                                                                                                                                                                                                                                                               TAMECHIKA, ICHIRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5 KTFLSVHEVMAVENY 19
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OTSUKA, KAORU
NAGAI, KEIICHI
                                                                                                                                                                                                                                                                                                                                                                                     , NAOHIKO
                                                                                                       APPLICANT: ISOGAI, TAKAO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; ORGANISM: Homo sapiens
US-10-094-749-3093
                                                           Publication No. ÚS20
GENERAL INFORMATION:
                     JS-10-094-749-3093
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ORGANISM:
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                                                                                                                                                                                                     APPLICANT: Nepomnichy, Boris
APPLICANT: Turner, C. Alexander Jr
APPLICANT: Sambrowing, Brian
TITLE OF INVENTOR: No. 1952020038011A1e1 Human Kinases and Polynucleotides Encoding
FILE REFERENCE: LEX-0137-USA
CURRENT APPLICATION NUMBER: US 60/183, 582
PRIOR APPLICATION NUMBER: US 60/183, 582
PRIOR PILING DATE: 2000-02-18
PRIOR PILING DATE: 2000-02-22
NUMBER OF SEQ ID NOS: 50
SOFTWARE: PSESEQ for Windows Version 4.0
SEQ ID NO 22
LENGTH: 473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Nepomnichy, Boris
APPLICANT: Turner, C. Alexander Jr
APPLICANT: Turner, C. Alexander Jr
APPLICANT: Turner, C. Alexander Jr
APPLICANT: Turner, C. Batian
APPLICANT: Turner, C. Batian
APPLICANT: Turner, C. Batian
APPLICANT: Sambrowicz, Brian
CURRENT APPLICATION NUMBER: US/99/783,320
CURRENT FILING DATE: 2000-02-18
PRIOR APPLICATION NUMBER: US 60/183,582
PRIOR APPLICATION NUMBER: US 60/184,014
PRIOR FILING DATE: 2000-02-22
NUMBER OF SEQ ID NOS: 50
SEQ ID NO 30
LENGTH: 520
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 44; DB 9; Length 473;
Pred. No. 84;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3; Mismatches
                                                                                                  Sequence 22, Application US/09783320
Patent No. US20020038011A1
GENERAL INPORMATION:
APPLICANT: Walke, D. Wade
APPLICANT: Hu, Yi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; Sequence 30, Application US/09783320; Patent No. US20020038011A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     40.0%;
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105 KALLSVHDTVAQKNY 119
105 KALLSVHDTVAQKNY 119
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Best Local Similarity 53.3
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 53.3
Matches 8; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM: homo sapiens
US-09-783-320-30
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ORGANISM: homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 14
US-09-783-320-30
                                                               RESULT 13
US-09-783-320-22
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APPLICANT: Nepomnichy, Boris
APPLICANT: Turner, C. Alexander Jr
TITLE OF INVENTION: No. US20020038011A1e1 Human Kinases and Polynucleotides Encoding t
TILE OF INVENTION: No. US20020038011A1e1 Human Kinases and Polynucleotides Encoding t
FILE REFERENCE: LEX-0137-USA
CURRENT APPLICATION NUMBER: US 60/183,582
PRIOR APPLICATION NUMBER: US 60/183,582
PRIOR APPLICATION NUMBER: US 60/184,014
PRIOR PILING DATE: 2000-02-18
PRIOR FILING DATE: 2000-02-22
NUMBER OF SEQ ID NOS: 50
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 12
LENGTH: 318
TYPE: PRT
CREATE: APPLICATION NUMBER: US 60/184,014
CREAT
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APPLICANT: Nepomnichy, Boris
APPLICANT: Nepomnichy, Boris
APPLICANT: Nepomnichy, Boris
APPLICANT: Nepomnichy, Boris
APPLICANT: Zambrowicz, Brian
TITLE OF INVENTION: No. US20020038011A1e1 Human Kinases and Polynucleotides Encoding t
FILE REPERBINGE: LEX-013-USA
CURRENT PEPLICATION NUMBER: US/09/783,320
CURRENT FILING DATE: 2001-02-15
PRIOR APPLICATION NUMBER: US 60/183,582
PRIOR APPLICATION NUMBER: US 60/184,014
PRIOR FILING DATE: 2000-02-18
PRIOR FILING DATE: 2000-02-22
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40.0%; Score 44; DB 9;
Best Local Similarity 53.3%; Pred. No. 53;
Matches 8; Conservative 3; Mismatches '
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Best Local Similarity 53.3%; Pred. No. 64;
Matches 8; Conservative 3; Mismatches
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SOFTWARE: FaetSEQ for Windows Version 4.0
SEQ ID NO 18
LENGTH: 375
                                                                                                                                                                                                                                                                              Sequence 12, Application US/09783320 Patent No. US20020038011A1
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                                                                                105 KALLSVHDTVAQKNY 119
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                                    5 KTFLSVHEVMAVENY 19
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ORGANISM: homo sapiens
                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
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APPLICANT: Turner, C. Alexander Jr
APPLICANT: Turner, C. Alexander Jr
APPLICANT: Zambrowicz, Brian
TITLE OF INVENTION: No. 20020038011Alel Human Kinases and Polymucleotides Encoding
FILE REFERENCE: LEX.0137-USA
CURRENT APPLICATION NUMBER: US/09/783,320
CURRENT APPLICATION NUMBER: US 60/183,582
PRIOR FILING DATE: 2000-02-18
PRIOR FILING DATE: 2000-02-18
PRIOR FILING DATE: 2000-02-2
NUMBER OF SEQ ID NOS: 50
SOFTWARE: FRSEEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Griffais, R. TITLE OF INVENTION: Chlamydia pneumoniae genomic sequence and polypeptides, fragmente TITLE OF INVENTION: thereof and uses thereof, in particular for the diagnosis, preve TITLE OF INVENTION: and treatment of infection PILE REFERENCE: 9710-003-999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
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                                                                                                                                                                                                                                             Query Match 48.2%; Score 53; DB 15; Length 184; Best Local Similarity 55.0%; Pred. No. 0.91; Matches 11; Conservative 3; Mismatches 6; Indels
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44.5%; Score 49; DB 15; Length 195;
Best Local Similarity 50.0%; Pred. No. 4.5;
Matches 10; Conservative 4; Mismatches 6; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION NUMBER: US/10/289,762
CURRENT FILING DATE: 2003-03-27
NUMBER OF SEQ ID NOS: 6849
SEQ ID NO 616
LENGTH: 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; Sequence 616, Application US/10289762
; Publication No. US20040006218A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; Sequence 8, Application US/09783320
; Patent No. US20020038011A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                        3 RKKTFLSVHEVMAVENYAKD 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                      26 RKKTFLSSHRVLARPSFPVD 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3 RKKTFLSVHEVMAVENYAKD 22
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SOFTWARE: SeqWin99, version 1.02
SEQ ID NO 375
LENGTH: 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; TYPE: PRT
; ORGANISM: Chlamydia pneumoniae
US-10-289-762-616
                                                                                                      TYPE: PRT ORGANISM: Chlamydia pneumoniae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity 53.3
Matches 8, Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: PRT
ORGANISM: homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 9
US-10-289-762-616
                                                                                                                                                                           US-10-312-273-375
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US-09-783-320-8
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Sequence 375, Application US/10312273
Fublication No. US20040005667A1
GENERAL INCOMMATION:
APPLICANT: CHIRON SpA
TITLE OF INVENTION: IMMUNISATION AGAINST CHLAMYDIA PNEUMONIAE
FILE REPERENCE: PO25035W0
CURRENT APPLICATION NUMBER: US/10/312,273
CURRENT PILING DATE: 2002-12-20
FRIOR FILING DATE: 2000-07-03
FRIOR FILING DATE: 2000-07-03
FRIOR PLICATION NUMBER: 0017047.2
FRIOR FILING DATE: 2000-07-11
FRIOR PLICATION NUMBER: 0017983.8
FRIOR PLICATION NUMBER: 0017983.8
FRIOR FILING DATE: 2000-07-21
FRIOR FILING DATE: 2000-07-21
FRIOR FILING DATE: 2000-07-21
FRIOR PLICATION NUMBER: 0019368.0
FRIOR FILING DATE: 2000-08-18
FRIOR PLICATION NUMBER: 0020440.4
FRIOR FILING DATE: 2000-08-18
FRIOR FILING DATE: 2000-09-14
FRIOR FILING DATE: 2000-09-14
FRIOR FILING DATE: 2000-09-14
FRIOR FILING DATE: 2000-09-14
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OTHER INFORMATION: EXPRESSED IN BT474, SIGNAL = 0.96
OTHER INFORMATION: EST HUMAN HIT: AI200857.1, EVALUE 5.00e-23
OTHER INFORMATION: SWISSPROT HIT: 060676, EVALUE 1.00e-01
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                                                                             FRIOR APPLICATION NUMBER: 2001-01-30
FRIOR FILING DATE: 2001-01-30
FRIOR FILING DATE: 2001-01-30
FRIOR PEDPLICATION NUMBER: PCT/USO1/00669
FRIOR PILING DATE: 2001-01-30
FRIOR PILING DATE: 2001-01-30
FRIOR APPLICATION NUMBER: PCT/USO1/00668
FRIOR FILING DATE: 2001-01-30
FRIOR FILING DATE: 2001-01-30
FRIOR FILING DATE: 2001-01-30
FRIOR PELING DATE: 2001-01-30
FRIOR APPLICATION NUMBER: PCT/USO1/00663
FRIOR APPLICATION NUMBER: PCT/USO1/00661
FRIOR APPLICATION NUMBER: PCT/USO1/00661
FRIOR FILING DATE: 2001-01-30
FRIOR FILING DATE: 2001-01-30
FRIOR FILING DATE: 2001-01-30
FRIOR APPLICATION NUMBER: PCT/USO1/00670
FRIOR APPLICATION NUMBER: US 60/234,687
FRIOR FILING DATE: 2000-09-21
FRIOR FILING DATE: 2000-09-21
FRIOR FILING DATE: 2000-06-30
FRIOR FILING DATE: 2000-06-30
FRIOR FILING DATE: 2000-06-30
FRIOR FILING DATE: 2000-06-30
FRIOR FILING DATE: 2001-01-29
FRIOR FILING DATE: 2001-01-29
FRIOR FILING DATE: 2001-01-29
FRIOR FILING DATE: 2001-01-29
FRIOR FILING DATE: 2001-01-39
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Matches 20; Conservative
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ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-864-761-48936
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Sequence 48936, Application US/09864761

Patent No. US20020048763A1

GENERAL INFORMATION:

APPLICANT: Rank, David R.

APPLICANT: Hanzel, David R.

APPLICANT: Hanzel, David R.

APPLICANT: Hanzel, David R.

TITLE OF INVENTION: HUMAN GENOME-DERIVED SINGLE EXON NUCLEIC ACID PROBES USFUL FOR TITLE OF INVENTION: GENE EXPRESSION ANALYSIS BY MICROARRAY TITLE OF INVENTION: GENE EXPRESSION ANALYSIS BY MICROARRAY

FILE SEFERRENCE: Acomicaa.X-1

CURRENT APPLICATION NUMBER: US/09/864,761

CURRENT APPLICATION NUMBER: US 60/180,312

PRIOR FILING DATE: 2000-05-26

PRIOR FILING DATE: 2000-06-26

PRIOR FILING DATE: 2000-08-03

PRIOR FILING DATE: 2000-08-03

PRIOR FILING DATE: 2000-09-27

PRIOR PLILING DATE: 2000-09-27

PRIOR PLILING DATE: 2000-09-27

PRIOR FILING DATE: 2001-01-00-04
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NN: EXPRESSED IN LUNG, SIGNAL = 1.5

NN: EXPRESSED IN LUNG, SIGNAL = 1.6

NN: EXPRESSED IN PLACENTA, SIGNAL = 1.7

NN: EXPRESSED IN PLACENTA, SIGNAL = 1.7

NN: EXPRESSED IN FETAL LIVER, SIGNAL = 1.1

NN: EXPRESSED IN HEART, SIGNAL = 1.1

NN: EXPRESSED IN HEART, SIGNAL = 1.1

NN: EXPRESSED IN HELA, SIGNAL = 1.3

NN: EXPRESSED IN HELA, SIGNAL = 1.2

NN: EXPRESSED IN HELA, SIGNAL = 1.3
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PRIOR APPLICATION NUMBER: PCT/USO1/00668
PRIOR FILING DATE: 2001-01-30
PRIOR APPLICATION NUMBER: PCT/USO1/00663
PRIOR APPLICATION NUMBER: PCT/USO1/00662
PRIOR APPLICATION NUMBER: PCT/USO1/00661
PRIOR PILING DATE: 2001-01-30
PRIOR PILING DATE: 2001-01-30
PRIOR PILING DATE: 2001-01-30
PRIOR APPLICATION NUMBER: PCT/USO1/00670
PRIOR APPLICATION NUMBER: PCT/USO1/00670
PRIOR APPLICATION NUMBER: US 60/234,687
PRIOR PILING DATE: 2000-09-21
PRIOR PILING DATE: 2000-06-30
PRIOR FILING DATE: 2000-06-30
PRIOR FILING DATE: 2001-01-29
PRIOR PILING DATE: 2001-01-30
PRIOR PILING DATE: 2011-01-29
NUMBER OF SEQ ID NOS: 49117
SOFTWARE: Annomax Sequence Listing Engine vers: 1.1
SEQ ID NO 34822
LENGTH. 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                91.8%; Score 101; DB 9; I
100.0%; Pred. No. 2.2e-09;
tive 0; Mismatches 0;
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Best Local Similarity 100.
Matches 20; Conservative
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ORGANISM: Homo sapiens
FEATURE:
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OTHER INFORMATION:
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                                                                                                                                                                                                                                                                                                    Length 115;
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TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Proceagulant Protein
TITLE OF INVENTION: Inhibit Cancer Proceagulant Protein
FLIE REFERENCE: 00-81PC
CURRENT APPLICATION NUMBER: 05/09/941,314
CURRENT PILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 06/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SEQ ID NO 2
SEQ ID NO 2
LENGTH: 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein; FILE REFERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT PILING DATE: 2001-08-29
PRIOR PILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SEQ ID NOS: 19
SEQ ID NO 4: SEQ ID NOS: 19
SEQ ID NO 4: SEQ ID NOS: 117
                                                                                                                                                                                                                                                                                                                                                  0; Indels
                                                                                                                                                                                                                                                                                               Query Match 100.0%; Score 110; DB 9; Best Local Similarity 100.0%; Pred. No. 1.8e-10; Matches 22; Conservative 0; Mismatches 0;
                 CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 3
                                                                                                                                                                                                                                                                                                                                                                                              1 QARKKTFLSVHEVMAVENYAKD 22
                                                                                                                                                                                                                                                                                                                                                                                                                           2 QARKKTFLSVHEVMAVENYAKD 23
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 4, Application US/09941314
Patent No. US20020142396A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; Sequence 2, Application US/09941314; Patent No. US20020142396Al; GENERAL INFORMATION:
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ORGANISM: Homo sapiens
                                                                                                                                                                                 LENGTH: 115
TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: PRT
ORGANISM: Homo sapiens
FILE REFERENCE: 00-81PC
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US-09-941-314-2
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US-09-941-314-4
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Sequence 34822, Application US/09864761
Sequence 34822, Application US/09864761
Patent No. US20020048763A1
GENERAL INFORMATION:
GENERAL INFORMATION:
Sharron G.
APPLICANT: Penn, Sharron G.
APPLICANT: Hanzel, David K.
APPLICANT: Hanzel, David K.
APPLICANT: Chen, Weneheng
TITLE OF INVENTION: HUMAN GENOME-DERIVED SINGLE EXON NUCLEIC ACID PROBES USEFUL FOR TITLE OF INVENTION: GENE EXPRESSION ANALYSIS BY MICROARRAY
TITLE OF INVENTION NUMBER: US/09/864,761
CURRENT APPLICATION NUMBER: US/09/864,761
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      Length 137;
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Patent No. US20020142396A1

GENERAL INVENDENCY

TITLE OF INVENTION:
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
FILE REFERENCE: 2009-081PC

CURRENT FILING DATE: 2001-08-29

PRIOR APPLICATION NUMBER: 60/230,230

PRIOR PAPLICATION NUMBER: 60/230,230

PRIOR PLING DATE: 2001-09-01

NUMBER OF SEQ ID NOS: 19

SOFTWARE: FastSEQ for Windows Version 4.0

SEQ ID NO 6

LENGTH: 36
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Query Match 100.0%; Score 110; DB 9; Best Local Similarity 100.0%; Pred. No. 2.2e-10; Matches 22; Conservative 0; Mismatches 0;
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PRIOR PELICATION NUMBER: US 60/180,312
PRIOR APPLICATION NUMBER: US 60/207,456
PRIOR PELING DATE: 2000-05-20
PRIOR PILING DATE: 2000-05-30
PRIOR PILING DATE: 2000-08-03
PRIOR PILING DATE: 2000-08-03
PRIOR PILING DATE: 2000-09-03
PRIOR PILING DATE: 2000-10-04
PRIOR PLING DATE: 2000-09-27
PRIOR PLING DATE: 2000-09-27
PRIOR APPLICATION NUMBER: PCT/US01/00666
PRIOR PLING DATE: 2001-01-30
PRIOR PILING DATE: 2001-01-30
PRIOR APPLICATION NUMBER: PCT/US01/00664
PRIOR APPLICATION NUMBER: PCT/US01/00664
PRIOR APPLICATION NUMBER: PCT/US01/00664
PRIOR APPLICATION NUMBER: PCT/US01/00669
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PRIOR FILING DATE: 2001-01-30
                                                                                                                                 1 QARKKTFLSVHEVMAVENYAKD 22
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Sequence 5, Appli
Sequence 3, Appli
Sequence 2, Appli
Sequence 2, Appli
Sequence 34822, A
Sequence 375, App
Sequence 375, App
Sequence 16, Appl
Sequence 12, Appl
Sequence 12, Appl
Sequence 22, Appl
Sequence 22, Appl
Sequence 22, Appl
Sequence 30, Appl
                                                                                                                                                                    March 18, 2004, 14:15:06 ; Search time 13.3135 Seconds (without alignments) 427.913 Million cell updates/sec
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1: /cgn2_6/ptodata/2/pubpaa/USO7_PUBCOMB.pep:*
2: /cgn2_6/ptodata/2/pubpaa/PCT_NEW_PUB_pep:*
3: /cgn2_6/ptodata/2/pubpaa/NEG_NEW_PUB_pep:*
4: /cgn2_6/ptodata/2/pubpaa/USO6_NEW_PUB_pep:*
5: /cgn2_6/ptodata/2/pubpaa/USO6_PUBCOMB.pep:*
6: /cgn2_6/ptodata/2/pubpaa/USO8_NEW_PUB_pep:*
7: /cgn2_6/ptodata/2/pubpaa/USO8_NEW_PUB_pep:*
8: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*
9: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*
11: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*
11: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*
13: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*
14: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*
15: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*
16: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*
17: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*
18: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*
19: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*
11: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*
12: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*
13: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*
14: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*
15: /cgn2_6/ptodata/2/pubpaa/USO8_PUBCOMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1049977
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
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US-09-941-314-3
US-09-941-314-4
US-09-941-314-2
US-09-941-314-6
US-09-864-761-34822
US-09-864-761-48936
US-09-864-761-48936
US-10-312-273-375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1049977 seqs, 258955339 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SUMMARIES
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1 QARKKTFLSVHEVMAVENYAKD 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                 OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                        Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Minimum DB seq length: 0
Maximum DB seq length: 200000000
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Match Length DB
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                                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
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                                                                                                                                                                                                                                                                                                                                                       Sequence:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Database
                                                                                                                                                                             Run on:
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action of a contract of a cont		-46 seducine	Sequence		9730	80	22A-65756 Sequence 65756, A		Sequence 499	562 Sequence 5756	Sequence 1	05 Sequence	Seguence		Sequence	Sequence	Seguence	Seguence		Sequence 18232	Sequence 15		Seguence 56	Sequence 78,	-64141 Sequence 64141	-254688 Seguence 25468	-199963 Sequence 19996	Seguence	Sequence 24488	99-268671 Sequence 268671,	
026-282-300	2 2	20-07	_			US-09-895-913A-33		US-10-347-470A-4	Þ		Þ			US-10-4	US-10-4	US-10-4		_	_	_	_	_	US-10	_	ns	ns	US-1	US-10-424-	US-10-424-	US-10-424-5	
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9	100	9/0	576	576	107	259	431	467	1054	1175	1208	1217	281	62	212	273	437	577	597	214	244	455	456	456	463	65	86	102	119	185	
9		40.0	40.0	40.0	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	38.6	38.2	38.2	38.2	38.2	38.2	38.2	37.3	37.3	37.3	37.3	37.3	36.8	36.4	36.4	Ψ	36.4		
7	r <		44	44	43	43	43	43	43	43	43	43	42.5	42	42	4 2	42	42	42	41	41	41	41	41	40.5	40	40	40	40		
71	9 6	77	18	19	20	21	22	23	24	25	56	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	

ALIGNMENTS

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Gaps
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                 ; Sequence 5, Application US/09941314; Sequence 5, Application US/09941314; Patent No. US20020142396A1
; GENERAL INFORMATION:
; APPLICANT: ZymoGenetics, Inc.; TITLE OF INVENTION: Inhibit Cancer Procoagulant Frotein; FILE REFERENCE: 00.081PC
; CURRENT APPLICATION NUMBER: US/09/941,314
; CURRENT FILING DATE: 2001-08-29
; PRIOR APPLICATION NUMBER: 60/230,230
; PRIOR APPLICATION NUMBER: 60/230,230
; RIOR PLICATION NUMBER: 2001-09-01
; NUMBER OF SEQ ID NOS: 19
; SEC ID NO 5
; LENGTH: 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 3, Application US/09941314;
Patent No. US20020142396A1
GENERAL INFORMATION:
APPLICANT: Zymodenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Proceagulant Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 QARKKTFLSVHEVMAVENYAKD 22
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US-09-941-314-5
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US-10-094-749-3093

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; EARLIER APPLICATION NUMBER: 60/134,175
; EARLIER FILING DATE: 1999-05-13
; NUMBER OF SEQ ID NOS: 30
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 28
; LENGTH: 690
; TYPE: PRT
; ORGANISM: Human
US-09-422-869-28

Query Match
Best Local Similarity 53.8%; Pred. No. 2.8e+02;
Matches 7; Conservative 4; Mismatches 2; Indels 0; Gaps
Qy 1 QARKKTPLSVHEV 13

COMPANY ANSKRIFINLER 455
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Search completed: March 18, 2004, 14:25:35 Job time : 6.63095 secs

29190-20002.20

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REFERENCE/DOCKET NUMBER:
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US-09-377-497-70
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| Patent No. 6617156
| GENERAL INFORMATION:
| APPLICATY: Lynn Doucette-Stamm et al
| TITLE OF INVENTION: ENTEROCOCCUS FAECALIS FOR DIAGNOSTICS AND THERAPEUTICS
| TITLE OF INVENTION: ENTEROCOCCUS FAECALIS FOR DIAGNOSTICS AND THERAPEUTICS
| TITLE OF INVENTION: ENTEROCOCCUS FAECALIS FOR DIAGNOSTICS AND THERAPEUTICS
| CURRENT APPLICATION NUMBER: US/09/134,000C
| CURRENT APPLICATION NUMBER: US 60/055,778
| PRIOR PAPICATION NUMBER: US 60/055,778
| PRIOR PLILING DATE: 1997-08-15
| NUMBER OF SEQ ID NOS: 6612
| SEQ ID NO 5712
| LENGTH: 399
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Fatent No. 62078B1
FAREAL INFORMATION:
APPLICANT: THEOLOGIS, ATHANASIOS
APPLICANT: SATO, TAKAHIDO
TITLE OF INVENTION: CONTROL OF FRUIT RIPENING THROUGH
TITLE OF INVENTION: GENETIC CONTROL OF ACC SYNTHASE SYNTHESIS
NUMBER OF SEQUENCES: 34
CORRESPONDENCE ADDRESS:
ADDRESSEE: MORRISON & FORESTER
STREET: 755 Page Mill Road
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                                          Length 291;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CITY: Palo Alto
CITY: Palo Alto
CUNTRY: California
COUNTRY: USA
ZIP: 94304-1018
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: BE PC compatible
COMPUTER: USPELICATION DATA:
APPLICATION NUMBER: US/08/378,313
                                        35.5%; Score 39; DB 4; I 33.3%; Pred. No. 1.1e+02; tive 8; Mismatches 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLASSIPICATION: 800
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/862,493
FILING DATE: 02-APR-1992
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                 3 RKKTFLSVHEVM--AVENYAK 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          125 KSTLQTVQEFMAKTPFAKD 143
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; TYPE: PRT
; ORGANISM: Enterococcus faecalis
US-09-134-000C-5712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REGISTRATION NUMBER: 29,959
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                     Ouery Match
Best Local Similarity 33.3%
Best Local 7; Conservative
                                                                                                                                                                                                                                                RESULT 12
US-09-134-000C-5712
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US-09-328-352-6399
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US-08-378-313-33
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                                                                                                                                                                                                                                                                  35.5%; Score 39; DB 3; Length 469; 53.3%; Pred. No. 1.8e+02; Live 3; Mismatches 4; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: HANIS, CRAIG L.
APPLICANT: BELL, GRAEME I.
TITLE OF INVENTION: METHODS OF TREATMENT OF TYPE 2 DIABETES
FILE REFERENCE: ACD:307
CURRENT APPLICATION NUMBER: US/09/422,869
CURRENT FILING DATE: 1999-10-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sedence 70, Application US/09377497; Patent No. 6670119
GENERAL INFORMATION:
APPLICANT: YOSHIKAWA, YOSHIE
APPLICANT: MYCAI, HIROYUKI
APPLICANT: ARADA, KIYOZO
APPLICANT: ARADA, KIYOZO
FILE APPLICANT: ARADA, KIYOZO
FILE REFERENCE: 1422-388P
CURRENT APPLICATION NUMBER: US/09/377,497
CURRENT FILING DATE: 1999-08-20
NUMBER OF SEQ ID NOS: 70
SEQ ID NO 70
SEQ ID NO 70
LENGTH: 664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; OTHER INFORMATION: any n or Xaa = unknown US-09-377-497-70
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Patent No. 6235481
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 856-5600
TELEFAX: (415) 494-0792
                                                              TELEX: 706141
INFORMATION FOR SEQ 1D NO: 33:
SEQUENCE CHARACTERISTICS:
LENGRH: 469 amino acide
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: POLONSKY, KENNETH S. APPLICANT: HORIKAWA, YUKIO APPLICANT: ODA, NAOHISA APPLICANT: COX, NANCY J.
                                                                                                                                                                                                                                                                                                                                                                                      |:|| ||: :|| |
243 FVSVMEVLIEKNYMK 257
                                                                                                                                                                                                                                                                                                                                                             7 FLSVHEVMAVENYAK 21
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417 RARSKTFINLREV 429
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APPLICANT: ZHOU, YUN-PING
APPLICANT: OTANI, KENICHI
                                                                                                                                                                               single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                    TOPOLOGY: linear
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8 LSVHEVMAVE----
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; ORGANISM: M.catarrhalis
US-09-540-236-2056
                                                                                                                                                                                                                                                                                                                                                                               US-09-252-991A-25843
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US-09-328-352-6399
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Batent No. 6610836
GENERAL INFORMATION:
APPLICANT: Gary Breton et. al

TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO KLEBSIELLA

TITLE OF INVENTION: NEWMONIAE FOR DIAGNOSTICS AND THERAPEUTICS

CURRENT APPLICATION NUMBER: US/09/489,039A

CURRENT APPLICATION NUMBER: US/09/489,039A

PRIOR FILING DATE: 1050-01-27

PRIOR FILING DATE: 1999-01-29

NUMBER OF SEQ ID NOS: 14342
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                                                             Length 293;
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Pred. No. 1.1e+02;
1; Mismatches 9; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 4; Length 326;
                                                                                                  IndelB
                                                                                                                                                                                                                                 RESULT 7
US-09-800-729-195
Sequence 195, Application US/09800729
Fatent No. 6605592
GENERAL INFORMATION:
TITLE OF INVENTION:
TITLE OF INVENTION:
CURRENT APPLICATION NUMBER: US/09/800, 729
CURRENT PILICATION NUMBER: PCT/US00/26013
FRIOR FILING DATE: 2001-03-08
FRIOR FILING DATE: 2000-09-22
FRIOR APPLICATION NUMBER: 60/155,709
                                                             DB 4;
                                                                                                6; Mismatches
                                                           Score 40.5;
Pred. No. 61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 36.4%; Score 40; 31.2%; Pred. No. 8
                                                                                                                                                              207 RKHFID-HEINSIONYLSD 224
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253 KATFSAVHEAQAYETRPVD 271
                                                                                                                                       4 KKTFLSVHEVMAVENYAKD 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4 KKTFLSVHEVMAVENYAKD 22
ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: PRT
ORGANISM: Klebsiella pneumoniae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4 KKTFLSVHEVMAVENY 19
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8 KKIFIHMHEIIQIDGH 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 47.4%;
Matches 9; Conservative
                                                         Query Match
Best Local Similarity 36.8%;
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 31.2.
Then 5, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       , ORGANISM: Homo sapiens
US-09-800-729-195
        ; OKGANISM: FBEULO:
US-09-252-991A-27435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 8
US-09-489-039A-13335
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RESULT

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Sequence 2056, Application US/09540236
Sequence 2056, Application US/09540236
Sequence 2056, Application US/09540236
GENERAL INFORMATION:
APPLICANT: Gary L. Breton et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO MORAXELLA CATAR!
TITLE OF INVENTION: POR DIAGNOSTICS AND THERAPEUTICS
FILE REPERBNCE: 2709.2005-001
CURRENT APPLICATION NUMBER: US/09/540,236
NUMBER OF SEQ ID NOS: 3840
SEQ ID NO 2056
LENGTH: 605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 6399, Application US/09328352

Befent No. 6562958

GRNERAL INFORMATION:
APPLICANT: Gary I. Breton et al.
TITLE OF INVENTION: BAUMANNII FOR DIAGNOSTICS AND THERAPEUTICS
TITLE OF INVENTION: BAUMANNII FOR DIAGNOSTICS AND THERAPEUTICS
CURRENT APPLICATION NUMBER: US/09/328,352
CURRENT FILING DATE: 1999-06-04
NUMBER OF SEQ ID NOS: 8252
SEQ ID NO 6399
LENGTH: 291
                                              GENERAL INFORMATION:
APPLICANT: Marc J. Rubenfield et al.
APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
CURRENT PAPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
PRIOR PELICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 25643
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 40; DB 4; Length 1242;
Pred. No. 3.7e+02;
2; Mismatches 7; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                || |:|||:|
89 LSQHQVMAIEALAVYVWALFGVMLLRALIGYAKD 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ---NYAKD 22
Sequence 25843, Application US/09252991A Patent No. 6551795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: PRT ORGANISM: Acinetobacter baumannii
                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: PRT ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             320 ETFGVIEETTAVERLAKD 337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5 KTFLSVHEVMAVENYAKD 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 50.0%;
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 35.9
Best Local Similarity 32.4
Matches 11; Conservative
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2

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GENERAL INFORMATION:
APPLICANT: Gary Br
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US-09-252-991A-27435
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                                                                                                                  RESULT 3
US-09-107-532A-6220
; Sequence 6.220, Application US/09107532A
; Patent No. 6583275
; Patent INFORMATION:
; GENERAL INFORMATION:
; TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ô
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 Gaps
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6; Indels
                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES: 7310
CORRESPONDENCE ADDRESS:
ADDRESSEE: GENOME THERAPEUTICS CORPORATION
STREET: 100 Beaver Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       39.1%; Score 43; DB 4; I
ilarity 53.3%; Pred. No. 1.2e+02;
Conservative 3; Mismatches 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION DATA:
APPLICATION DATA:
APPLICATION UNDER: US/09/107,532A
FILING DATE: 30-Jun-1998
PRIOR APPLICATION UNDER: 60/085,598
FILING DATE: 14 May 1998
APPLICATION NUMBER: 60/051571
FILING DATE: July 2, 1997
ATTORNEY/AGENT INFORMATION:
NAME: Ariniello, Pamela Deneke
REGISTRATION NUMBER: 40,489
REFERENCE/DOCKET NUMBER: GTC-012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: misc feature
LOCATION: (B) LÖCATION 1...1224
SEQUENCE DESCRIPTION: SEQ ID NO: 6220:
5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: Enterococcus faecium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-252-991A-30881
; Sequence 30881, Application US/09252991A
; Patent No. 6551795
; GENERAL INPORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                            ZIP: 02354
COMPUTER READABLE FORM:
MEDIUM TYPE: CD/ROM ISO9660
                                                          COMPUTER: PC
OPERATING SYSTEM: <Unknown>
                                    1 QARKKTFLSVHEVM--AVENYAK 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INFORMATION FOR SEQ 1D NO: 6220:
SEQUENCE CHARACTERISTICS:
LENGTH: 1224 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEPHONE: (781)893-5007
                                                                                                                                                                                                                                                                                                                                                     CITY: Waltham
STATE: Massachusetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | | | :|::||||
1040 KQLLQVRDVLSVENY 1054
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY: linear
MOLECULE TYPE: protein
HYPOTHETICAL: YES
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: amino acid
10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-107-532A-6220
Matches
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, APPLICANT: Marc J. Rubenfield et al

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Sequence 27435, Application US/09252991A

Patent No. 6551795
GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION:
TITLE OF INVENTION:
TITLE OF INVENTION:
ABPLICANT:
TITLE OF INVENTION:
ABPLICANT:
TITLE OF INVENTION:
ABPLICANTON:
TITLE OF INVENTION:
ABPLICANTON NUMBER: US/09/252,991A
CURRENT APPLICATION NUMBER: US 60/074,788
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR PRILING DATE: 1999-02-18
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 27435
LENGTH: 293
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS FILE REFERENCE: 107196.136

CURRENT APPLICATION NUMBER: US 60/074,788

PRIOR APPLICATION NUMBER: US 60/074,788

PRIOR PILING DATE: 1999-02-18

PRIOR FILING DATE: 1999-02-18

PRIOR FILING DATE: 1998-02-18

PRIOR FILING DATE: 1998-07-27

NUMBER OF SEQ ID NOS: 33142

SEQ ID NO 30881

LENGTH: 316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Gary Breton et. al
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO KLEBSIELLA
TITLE OF INVENTION: PNEUMONIAE FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 2709.2004001
CURRENT APPLICATION NUMBER: US/09/489,039A
CURRENT FILING DATE: US/09/489,039A
PRIOR PALICATION NUMBER: US 60/117,747
PRIOR FILING DATE: 1999-01-29
NUMBER OF SEQ ID NOS: 14342
SEQ ID NO 12252
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53.3%; Pred. No. 1.6e+02;
Migmatches 5;
                                                                                                                                                                                                                                                                                                                                                                                                                              Score 41; DB 4;
Pred. No. 55;
                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 37.3%; Score 41; DB Best Local Similarity 47.4%; Pred. No. 55; Matches 9; Conservative 3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-489-019A-11252
; Sequence 13252, Application US/09489039A
; Patent No. 6610836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4 KKTFLSVHEVMAVENYAKD 22
                                                                                                                                                                                                                                                                                                                                                  ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         63 ENTSLTIEEKMÄVTEVÄKD 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: PRT
ORGANISM: Klebsiella pneumoniae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         541 KTFLAEHOTRAAEFY 555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5 KTFLSVHEVMAVENY 19
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Best Local Similarity 53.37
Best Local Similarity 53.37
Conservative
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Sequence 616, App
Sequence 5383, Ap
Sequence 3081, Ap
Sequence 1322, A
Sequence 27435, A
Sequence 195, App
Sequence 25843, A
Sequence 5843, A
Sequence 5125, App
Sequence 5125, App
Sequence 5125, App
Sequence 319, App
Sequence 319, App
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 28, Appl
Sequence 294, Appl
Sequence 5, Appl
Sequence 1, Appli
Sequence 3351, Ap
Sequence 3351, Ap
Sequence 2367, Ap
Sequence 5431, Ap
Sequence 5431, Ap
                                                   March 18, 2004, 14:07:11 ; Search time 5.63095 Seconds (without alignments) 201.701 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                      Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                   Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence Sequence Sequence 4 Sequence 1 Sequence 2 Sequence 3 Sequence 3
                                                                                                                                                                     389414
                                                                                                                                                                                                                                                 Issued Patents AA:*
1: /cgn2_6/ptodata/2/iaa/5A_COMB.pep:*
2: /cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
3: /cgn2_6/ptodata/2/iaa/6A_COMB.pep:*
4: /cgn2_6/ptodata/2/iaa/6B_COMB.pep:*
5: /cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*
6: /cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                  Total number of hits satisfying chosen parameters:
                                                                                                                                                    389414 segs, 51625971 residues
                                                                                                                                                                                                                                                                                                                                                         SUMMARIES
                                                                                      US-09-941-314-5
110
1 QARKKTFLSVHEVMAVENYAKD 22
                                                                                                                                                                                                              Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                  protein search, using sw model
                                                                                                                         BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                     Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                   BB
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Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  605
291
399
469
664
664
1284
1384
133
208
                                                                                                                                                                                                                                                                                                                                                                                                                                      Title:
Perfect score:
                                                                                                                          Scoring table:
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41
40.5
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                                   •
                                   OM protein
                                                                                                        Sequence:
                                                                                                                                                    Searched:
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                                                     Run on:
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No.
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38 34.5 715 4 US-09-598-419-329 Sequence 329, App 38 34.5 2987 2 US-08-970-269A-29 Sequence 29, Appl 38 34.5 2987 2 US-08-970-269A-30 Sequence 29, Appl 38 34.5 2987 2 US-08-970-269A-30 Sequence 30, Appl 38 34.5 3959 2 US-09-407-562-30 Sequence 30, Appl 37.5 34.1 316 4 US-09-134-001C-3159 Sequence 3159, Ap 37.5 34.1 578 1 US-08-766-014-4 Sequence 29131, Appl 37.5 34.1 608 1 US-08-766-014-4 Sequence 27, Appl 37.5 34.1 872 1 US-08-766-014-3 Sequence 27, Appl 37.5 34.1 872 1 US-08-766-014-2 Sequence 27, Appl 37.5 34.1 872 1 US-08-766-014-2 Sequence 27, Appl 37.5 34.1 872 1 US-08-766-014-2 Sequence 27, Appl 37.5 34.6 48 4 US-09-779-451-22 Sequence 6, Appl 37.3 33.6 45 4 US-09-779-451-25 Sequence 6, Appl 37.3 33.6 198 3 US-08-540-266-3060 Sequence 85, Appl 37.3 33.6 198 3 US-08-565-506-85 Sequence 86, Appl 37.3 33.6 198 3 US-08-965-056-85 Sequence 86, Appl 37.3 33.6 198 3 US-08-965-056-85 Sequence 87, Appl 37.3 33.6 198 3 US-08-965-056-85 Sequence 87, Appl 37.3 33.6 207 4 US-09-543-681A-4234 Sequence 7778, Appl 37.3 33.6 198 3 US-08-965-056-85 Sequence 7778, Appl 37.3 33.6 48 US-09-543-681A-4234 Sequence 7778, Appl 37.3 33.6 48 US-09-543-681A-4234 Sequence 7778, Appl 37.3 33.6 48 US-09-963-039A-7778	ALIGNMENTS SULT 1 Sequence 616, Application US/09198452A Sequence 616, Application US/09198452A Sequence 616, Application US/09198452A Sequence 616, Application US/09198452A TITLE OF INVENTION: Chlamydia pneumoniae genomic sequence and polypeptides, fragments TITLE OF INVENTION: thereof and uses thereof, in particular for the diagnosis, prever TITLE OF INVENTION: and treatment of infection FILE REFERENCE: 9710-003-999 CORRENT APPLICATION NUMBER: US/09/198,452A CURRENT FILING DATE: 1998-11-24 NUMBER OF SEQ ID NOS: 6849 LEMOTH. 10.6 LEMOTH. 10.6	In Process of the second secon	RESULT 2 US-09-543-681A-5383 US-09-543-681A-5383 Sequence 5833, Application US/09543681A PATENT NO. 6605709 GENERAL INFORMATION: APPLICANT: GAYS BRETON: APPLICANT: GAYS RECONSINGER RELATING TO PROTEUS MIRABILITIE OF INVENTION: DIAGNOSTICS AND THERAPEUTICS FILE REFERENCE: 2709.1002-001 FILE REFERENCE: 2709.1002-001 FUNERRY APPLICATION NUMBER: US/09/543,681A CURRENT FILING DATE: 1999-04-09 FRIOR PILING DATE: 1999-04-09 NUMBER OF SEQ ID NOS: 8344 SEQ ID NO 5383 LENGTH: 255 TYPE: PRT ORGANISM: Froteus mirabilis US-09-543-681A-5383
228 33333333333333333333333333333333333	RESULT 1 US-09-198-452A-616 Sequence 616, Ap. PARCENT NO. 65592 GENERAL INCRMAT APPLICANT: Grif TITLE OF INVENT SEQ. ID NO 616 TENCTH. 106	TYPE: PRT ORGANISM: ORGANISM: O-09-198-452A Query Match Best Local S Matches 10	RESULT 2 US-09-543-681A-5383 ; Sequence 583, Ap. Patent No. 660570 ; GENERAL INFORMATI APPLICANT: GARY ; TITLE OF INVENTI ; TITLE OF INVENTI ; CURRENT APPLICAT ; CURRENT APPLICAT ; CURRENT FILING DAT ; CURRENT FILING DAT ; RIGHT FILING DAT ; NUMBER OF SQ ID ; PRIOR PELING DAT ; NUMBER OF SQ ID ; SQ ID NO 5383 LENGTH: 255 ; TYPE: PRT TYPE:

Score 43; DB 4; Length 255; Pred. No. 20;

39.1%; 43.5%;

Query Match Best Local Similarity

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The present invention relates to novel single exon nucleic acid probes used parts of the present sequence is a peptide encoded by one such probe. The probes are useful for measuring human gene expression in a human breast sample, where the probe hybridises at high stringency to a predicting, diagnosing, grading, staging, monitoring and prognosing diseases of the human breast, particularly those diseases with polygenic actiology. The diseases include: breast cancer, disorders of development, inflammatory diseases of the breast, fibrocystic changes, proliferative inflammatory disease and non-carcinoma tumours. Note: The sequence data for this patent did not form part directly from WIPO at the was obtained in electronic format directly from WIPO at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Novel single exon nucleic acid probe used to measuring gene expression in a human breast.
                                                                              Probe; human; breast disease; breast cancer; development disorder; inflammatory disease; proliferative breast disease; non-carcinoma tumour.
                                                Peptide #1515 encoded by probe for measuring breast gene expression.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             91.8%; Score 101; DB 4; Length 50; 100.0%; Pred. No. 1.5e-08; Live 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 27; SEQ ID NO 11573; 322pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                Rank DR;
                                                                                                                                                                                                                                                                                      26-MAY-2000; 2000US-0207456P.
30-JUN-2000; 2000US-00608408.
03-AUG-2000; 2000US-00532366.
21-SEP-2000; 2000US-023468PP.
27-SEP-2000; 2000US-023559P.
04-OCT-2000; 2000GB-00024263.
                                                                                                                                                                                                                                                                                                                                                                                                              (MOLE-) MOLECULAR DYNAMICS INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                Chen W,
                                                                                                                                                                                                                                    29-JAN-2001; 2001WO-US000661
                                                                                                                                                                                                                                                                      2000US-0180312P
              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 100.
Matches 20; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                              Penn SG, Hanzel DK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2001-476286/51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 50 AA;
                                                                                                                                                                  WO200157270-A2
                                                                                                                                    Homo sapiens.
                                                                                                                                                                                                                                                                        04-FEB-2000;
                09-OCT-2001
                                                                                                                                                                                                    09-AUG-2001
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Gaps

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Search completed: March 18, 2004, 14:14:57 Job time : 20.9484 secs

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RESULT 14

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bone marrow. They can be used to measure gene expression in bone marrow samples, which may enable the improved diagnosis and treatment of cancers such as lymphoma, leukaemia and myeloma. The present sequence is a protein encoded by one of the probes of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The present invention provides a number of single exon nucleic acid probes which are derived from genomic sequences expressed in the human brain. They can be used to measure gene expression in brain cell samples, which may enable the diagnosis and improved treatment of nervous system diseases such as Alzheimer's disease, multiple sclerosis, schizophrenia, epilepsy and cancers. The present sequence is a protein encoded by one of the probes of the invention
                                                                                                                                                                                                                                                                                                                                                                  Human brain expressed single exon probe encoded protein SEQ ID NO: 26976.
                                                                                                                                                                                                                                                                                                                                                                                                Human; brain expressed exon; gene expression analysis; probe; microarray; Alzheimer's disease; multiple sclerosis; schizophrenia; epilepsy; cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Single exon nucleic acid probes for analyzing gene expression in human
                                                                                                                                       Gaps
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                                                                                                       91.8%; Score 101; DB 4; Length 50; 100.0%; Pred. No. 1.5e-08; ive 0; Mismatches 0; Indels
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                                                                                                                                                                                    RKKTFLSVHEVMAVENYAKD 20
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2000US-0236359P.
2000GB-00024263.
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Best Local Similarity 100.0
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tes 20; Conserv
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27-SEP-2000;
04-OCT-2000;
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                                                                           Sequence 50
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The invention relates to a single exon nucleic acid probe (SENP) (1) for measuring human gene expression in a sample derived from human adult liver, comprising one of 13109 defined nucleotide sequences given in the specification (or complements fragments). The probe hybridises at high stringency to a nucleic acid molecule expressed in the human adult liver. (I) may be used for predicting, measuring and displaying gene expression in samples derived from human adult liver. The genes identified may be involved in genetic liver diseases such as cirrhosis, hyperlipoproteinaemia, hyperlipidaemia and hypercholesterolaemia which is associated with coronary heart disease. ABG793910 represent human liver single exon encoded peptides of the invention. Note: The sequence information for this patent dose not appear in the printed specification but was obtained in electronic format directly from WIPO at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human genome-derived single exon nucleic acid probes useful for analyzing gene expression in human adult liver.
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                                                                                                                                                                                                                                                                                                  Human; liver; cirrhosis; hyperlipoproteinaemia; hyperlipidaemia;
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                                                                                                                                                                                                                                                                                                                                    hypercholesterolaemia; coronary heart disease.
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                                                                                                                                                                                                                                    Human liver peptide, SEQ ID No 27563.
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30-JUN-2000; 2000US-0060B408.
03-AUG-2000; 2000US-023366.
21-SEP-2000; 2000US-023468PP.
27-SEP-2000; 2000US-0236359P.
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                               ABG48915 standard; peptide;
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ABG489:
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The invention relates to a spatially-addressable set of single exon nucleic acid probes for measuring gene expression in a sample derived from human breast and BT 474 cells. The method involves contacting the probes with a collection of detectably labelled nucleic acids derived from mRNA of human breast, and then measuring the label bound to each probe of the microarray. The probes are useful for verifying the expression of regions of genomic DNA predicted to encode proteins. They are useful for gene discovery, and for determining predisposition and/or prognosing breast disease. Gene expression analysis is useful for assessing the toxicity of chemical agents on cells. The microarray of this invention presents a far greater diversity of probes for measuring gene expression, with far less bias than expressed sequence tag microarrays. The method is suitable for rapid production of functional information from genomic sequence. The present sequence is a peptide encoded by a single exon nucleic acid probe of the invention. Note: The sequence data for this patent did not form part of the printed second in the present of the pr
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                                                                     New spatially-addressable set of single exon nucleic acid probes, useful for measuring gene expression in sample derived from human breast, comprises number of single exon nucleic acid probes.
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                                                                                                                                                                   Claim 27; SEQ ID NO 11881; 327pp + Sequence Listing; English.
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cardiovascular disease; hypertension; cardiac arrhythmia;
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Pred. No. 1.5e-08;
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100.0%; Pre
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21-SEP-2000; 2000US-0234687P.
27-SEP-2000; 2000US-0236359P.
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26-MAY-2000; 2000US-0207456P.
30-JUN-2000; 2000US-0060840B.
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                         WPI; 2001-496933/54
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human genome-derived single exon nucleic acid probes useful for analyzing
                                                                                                                                       measuring human gene expression in a sample derived from human heart (see MARALISS-ABA4130). The present sequence is a protein encoded by one such probe. The probes may be used for predicting, measuring and displaying gene expression in samples derived from the human heart via microarrays.
                                  Single exon nucleic acid probes for analyzing gene expression in human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The present invention provides a number of single exon nucleic acid probes which are derived from genomic sequences expressed in the human
                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                      The present invention relates to single exon nucleic acid probes for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human; bone marrow expressed exon; gene expression analysis; probe;
microarray; cancer; leukaemia; lymphoma; myeloma.
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                                                                                                                                                                                                                                                                                                                                                                                      Length 50;
                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                   91.8%; Score 101; DB 4; I ilarity 100.0%; Pred. No. 1.5e-08; Conservative 0; Mismatches 0;
                                                                                    Claim 15; SEQ ID NO 21294; 530pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Chen W, Rank DR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene expression in human bone marrow
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAM67252 standard; protein; 50 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                          3 RKKTFLSVHEVMAVENYAKD 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 RKKTFLSVHEVMAVENYAKD 20
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26-WAY-2000; 2000US-0207456P.
30-JUN-2000; 2000US-0060408.
03-AUG-2000; 2000US-00632366.
21-SEP-2000; 2000US-0234687P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27-SEP-2000; 2000US-0236359P. 04-OCT-2000; 2000GB-00024263.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
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WPI; 2001-488899/53.
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les 20; Conserv
                                                                                                                                                                                                                                                                                                                                                    Sequence 50 AA;
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                                                                                                                                                                                                                                                                                                                                                                                     Query Match
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Matches
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The invention relates to a spatially-addressable set of single exon nucleic acid probes for measuring gene expression in a sample derived from human breast and BT 474 cells. The method involves contacting the probes with a collection of detectably labelled nucleic acids derived from mRNA of human breast, and then measuring the label bound to each probe of the microarray. The probes are useful for verifying the expression of regions of ganomic DNA predicted to encode proteins. They are useful for gene discovery, and for determining predisposition and/or prognosing breast disease. Gene expression analysis is useful for assessing the toxicity of chemical agents on cells. The microarray of this invention presents a far greater diversity of probes for measuring gene expression, with far less bias than expressed sequence tag microarrays. The method is suitable for rapid production of functional information from genomic sequence. The present sequence is a peptide information from genomic sequence. The present sequence is a peptide sequence data for this patent did not form part of the invention. Note: The specification, but was obtained in electronic format directly from WIPO
                                                                                                New spatially-addressable set of single exon nucleic acid probes, useful for measuring gene expression in sample derived from human breast,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human; microarray; single exon probe; gene expression; breast; disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Peptide #1564 encoded by breast cell single exon nucleic acid probe.
                                                                                                                                                                             Claim 27; SEQ ID NO 15357; 327pp + Sequence Listing; English.
                                                                                                                                       comprises number of single exon nucleic acid probes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   91.8%; Score 101; DB 4; I
100.0%; Pred. No. 1.5e-08;
:ive 0; Mismatches 0;
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                    Rank DR;
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                    Chen W,
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2000US-00608408.
2000US-00632366.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30-JAN-2001; 2001WO-US000662.
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2000US-0236359P.
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Best Local Similarity 100.
Matches 20; Conservative
                    Hanzel DK,
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                                                           WPI; 2001-496933/54
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30-JUN-2000;
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27-SEP-2000;
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                    Penn SG,
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                                                                                                                                                                                                                                                                                                                                                                                              Human genome-derived single exon nucleic acid probes useful for analyzing
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human; microarray; single exon probe; gene expression; breast; disease;
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                                                                                                                                                                                                                                                                                                                  Chen W, Rank DR
                                                                                                                                                                                                                                                                                                                                                                                                                   gene expression in human placenta.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABB32389 standard; peptide; 50 AA
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26-MAY-2000; 2000US-0207456P.

30-UNN-2000; 2000US-00608408.

03-AUG-2000; 2000US-00632366.

21-SEP-2000; 2000US-023468PP.

27-SEP-2000; 2000US-0236359P.

04-OCT-2000; 2000US-0004463.
                                                                                                                                                                                                                                                                           (MOLE-) MOLECULAR DYNAMICS INC
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2000US-00632366.
2000US-0234687P.
2000US-0236359P.
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                                                                           30-JAN-2001; 2001WO-US000663
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nes 20; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          from human placenta. The
                                                                                                                                                                                                                                                                                                                Penn SG, Hanzel DK,
                                                                                                                                                                                                                                                                                                                                                       WPI; 2001-488897/53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 50 AA;
WO200157272-A2
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03-AUG-2000;
21-SEP-2000;
27-SEP-2000;
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26-MAY-2000;
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RESULT 9 ABB32389

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Length 50; Indels

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The invention relates to a single exon nucleic acid probe for measuring human gene expression in a sample derived from human feetal liver. The single exon nucleic acid probes may be used for predicting, measuring and displaying gene expression in samples derived from human fetal liver. The present sequence is a peptide encoded by a single exon nucleic acid probe of the invention. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          n genome-derived single exon nucleic acid probes useful for analyzing expression in human fetal liver.
                                                                                                                                                                                               Human; foetal liver; gene expression; single exon nucleic acid probe.
                                                                                                                                              Peptide #1592 encoded by human foetal liver single exon probe.
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  ABB34086 standard; peptide; 50 AA.
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                                                 ABB34086;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human genome-derived single exon nucleic acid probes useful for analyzing gene expression in human cervical epithelial cells.
                                                                                                                                                                                                                                                                                                                                                                                                                            Peptide #1530 encoded by probe for measuring cervical gene expression.
                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Probe; human; microarray; gene expression; cervical epithelial cell;
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     Length 36;
                                                 0; Indels
91.8%; Score 101; DB 5;
100.0%; Pred. No. 1e-08;
iive 0; Mismatches 0;
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                                                                                                                               AAM15096 standard; protein; 50
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2000US-0207456P.
2000US-00608408.
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2000US-0234687P.
2000US-0236359P.
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Best Local Similarity
Query Match
Best Local Similarity
Matches 20; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cervical cancer.
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21-SEP-2000;
27-SEP-2000;
04-OCT-2000;
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                                              20;
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Chen W, Rank DR;

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                                              Gaps
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                     91.8%; Score 101; DB 4;. Length 50; 100.0%; Pred. No. 1.5e-08; tive 0; Mismatches 0; Indel8
                                                                                                                                                                                                                                                 Probe; microarray; human; placenta; antenatal diagnosis; genetic disorder.
                                                                                                                                                      AAM27545 standard; protein; 50 AA.
                                                                     22
                                                                                     1 RKKTFLSVHEVMAVENYAKD
                                                                     3 RKKTFLSVHEVMAVENYAKD
                                                                                                                                                                                                      (first entry)
                                 Local Similarity 100.
Les 20; Conservative
Sequence 50 AA;
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3 RKKTFLSVHEVMAVENYAKD 22 RKKTFLSVHEVMAVENYAKD 20

RESULT 7

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RESULT 5
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                                                                                                                                                                                                                  88XCCCCCCCCCCCCCCCCCCCX8XHHHXBXHXBXBXBXBXBXBXXXXXX8XXXXXX
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copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zcys8 gene. This sequence represents an antigenic fragment of human cystatin-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        invention describes an isolated mammalian cystatin-8 (Zcys8)
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                                                                                                                                                                                                                                                                                                                                                                    Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation.
                                                                                                 Length 117;
                                                                                                                             Indels
                                                                                                                             0
                                                                                                 100.0%; Score 110; DB 5; 100.0%; Pred. No. 1.4e-09;
                                                                                                                            0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 2, Page 93-94; 100pp; English
                                                                                                                                                         QARKKTFLSVHEVMAVENYAKD 22
                                                                                                                                                                                   OARKKTFLSVHEVMAVENYAKD 25
                                                                                                                                                                                                                                                        AAU79852 standard; protein; 137 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bishop PD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29-AUG-2001; 2001WO-US026868.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-SEP-2000; 2000US-0230230P
                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                           Human cystatin-8 (Zcys8)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (ZYMO ) ZYMOGENETICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gao Z,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2002-383044/41.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N-PSDB; ABK49522
                                                                       Sequence 117 AA;
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                                                                                                                                                                                                                                                                                                                15-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
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                                                                                                                                                                                                                                                                                  AAU79852;
                                           (Zcys8)
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The invention describes an isolated mammalian cystatin-8 (Zcys8)

polypeptide (I). (I) is useful for: inhibiting cancer procoagulant

protein in an individual and thus inhibiting the thrombotic events

associated with cancer; promoting spermatogenesis, modulating seminal

fluid viscosity, enhancing viability of cryopreserved sperm, sperm

motility and fertilisation; and as antigenic peptides to generate

antibodies. Zcys8 is useful as research reagent for characterising sites

of interaction between Zcys8 and its receptor. Zcys8 is useful in

chancing fertilisation during assisted reproduction in humans and in

animals. Anti-(I) antibodies are useful to screen biological samples like

blood, urine, saliva, tissue biopsy and autopsy material in vitro for the

chood, urine, saliva, tissue biopsy and autopsy material in vitro for the

chood, urine, saliva, tissue biopsy and autopsy material in vitro for the

chood, urine, saliva, tissue biopsy and autopsy material in vitro for the

chood, urine, saliva, itssue biopsy and autopsy material in vitro for the

chood, urine, saliva, itssue biopsy and autopsy material.

Choopses of Zcys8 gene in a biological sample and Zcys8 genes.

The polynucleotide encoding (I) is useful to detect and co localise the

coligonucleotide encoding (I) is useful in determining whether a subject's

chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene

copy number changes, insertions, deletions, restriction site changes and

rearrangements and genetic alterations that inactivate the Zcys8 gene.

This sequence represents an antigenic fragment of human cystatin-8
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                                                                                                                                                                                                                                                              Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cystatin-8; Zcy88; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation; antigenic fragment.
                                                                                                                                                                  Length 137;
This is the amino acid sequence of human cystatin-8 (Zcys8)
                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                      Score 110; DB 5;
Pred. No. 1.7e-09;
; Mismatches 0;
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                                                                                                                                                                                                                                                                                                                                                                                                  24 QARKKTFLSVHEVMAVENYAKD 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAU79856 standard; peptide; 36 AA
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                                                                                                                                                                           Query Match 100.0%;
Best Local Similarity 100.0%;
Matches 22; Conservative 0
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                                                                                            Sequence 137 AA;
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The invention describes an isolated mammalian cystatin-8 (Zcy88)

polypeptide (I). (I) is useful for: inhibiting cancer procoagulant
protein in an individual and thus inhibiting the thrombotic events
sasociated with cancer; promoting spermatogenesis, modulating seminal
fluid viscosity, enhancing viability of cryopreserved sperm, sperm
motility and fertilisation; and as antigenic peptides to generate
contibodies. Zcy88 is useful as receptor. Zcy88 is useful in
entibodies. Zcy88 is useful as receptor. Zcy88 is useful in
enhancing fertilisation during assisted reproduction in humans and in
enhancing fertilisation during assisted reproduction in humans and in
contantine Anti-(I) antibodies are useful to screen biological samples like
blood, urine, saliva, tissue biopsy and autopsy material in vitro for the
presence of Zcy88. The antibodies are also useful to isolate large
cyantities of Zcy88 protein and DNA sequences that encode Zcy88 genes.
The polymucleotide encoding (I) is useful to detect and to localise the
expression of a Zcy88 gene in a biological sample and Zcy88
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quantities of Zcy88 protein and DNA sequences that encode Zcy88 genes. The polynucleotide encoding (I) is useful to detect and to localise the expression of a Zcy88 gene in a biological sample and Zcy88 oligonucleotide probes are useful for in vivo diagnosis. The polynucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation in the Zcy88 gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zcy88 gene. This sequence represents an antigenic fragment of human cystatin-8
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                                                                                                                                                                                                                                                                               Length 22;
                                                                                                                                                                                                                                                                                                                            0; Indels
                                                                                                                                                                                                                                                                               100.0%; Score 110; DB 5; 100.0%; Pred. No. 2.3e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human cystatin-8 (Zcys8) antigenic fragment #1.
                                                                                                                                                                                                                                                                                                                          0; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAU79853 standard; protein; 115 AA
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Matches 22; Conservative
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                                                                                                                                                                                                                                            Sequence 22 AA;
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The invention describes an isolated mammalian cystatin-8 (Zcys8)

polypeptide (I). (I) is useful for: inhibiting cancer procoagulant

protein in an individual and thus inhibiting the thrombotic events

casociated with cancer; promoting spermatogenesis, modulating seminal

fluid viscosity, enhancing viability of cryopreserved sperm, sperm

motility and fertilisation; and as antigenic peptides to generate

cantibodies. Zcys8 is useful as research reagent for characterising sites

of interaction between Zcys8 and its receptor. Zcys8 is useful in

cantibodies. Anti-(I) antibodies are useful to screen biological samples like

blood, urine, saliva, tissue biopsy and autopsy material in vitro for the

chood, urine, saliva, tissue biopsy and autopsy material in vitro for the

chood, urine, saliva, tissue biopsy and autopsy material in vitro for the

chood, urine, saliva, tissue biopsy and autopsy material in vitro for the

chood, urine, saliva, tissue biopsy and autopsy material in vitro for the

chood, urine, saliva, tissue biopsy and autopsy material in vitro for the

chooly and a Zcys8 protein and DNA sequences that encode Zcys8 genes.

The polynucleotide encoding (I) is useful to detect and to localise the

cholynucleotide probes are useful in a useful for in vivo diagnosis. The

colynucleotide encoding (I) is useful in vivo diagnosis. The

chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene
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oligonucleotide probes are useful for in vivo diagnosis. The polynucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation in the Zoyss gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zoyss gene. This sequence represents an antigenic fragment of human cystatin-8
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                                                                                                                                                                                                                           100.0%; Score 110; DB 5;
100.0%; Pred. No. 1.4e-09;
ive 0; Mismatches 0;
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                                                                                                                                                                                                                                                                                                                   22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAU79854 standard; protein; 117 AA
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                                                                                                                                                                                                                                                    Local Similarity 100.
Les 22; Conservative
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                                                                                                                                                                                   Sequence 115 AA;
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Matches
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                                                                                                                 March 18, 2004, 14:02:15; Search time 19.9484 Seconds (without alignments) 311.606 Million cell updates/sec
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                                                                                                                                                                                                                                                                                                                                                                                     1586107
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
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                                                                                                                                                                                                                                                                                                                                           1586107 seqs, 282547505 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
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110
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Perfect score:
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		۵			SUMMARIES	
	CO.	Query Match	Query Match Length	DB	ID	Description
-	110	100.0	22		AAU79855	Aau79855 Human cys
8	110	100.0	115	ഹ	AAU79853	
٣	110	100.0	117	'n	AAU79854	Aau79854 Human cys
4	110	100.0	137	'n	AAU79852	Aau79852 Human cys
S.	101	91.8	36	Ŋ	AAU79856	Aau79856 Human cys
9	101	91.8	20	4	AAM15096	Aam15096 Peptide #
7	101	91.8	20	4	ABB34086	
æ	101	91.8	20	4	AAM27545	ß
O	101	91.8	20	4	ABB32389	9 Peptide
10	101	91.8	20	4	ABB28913	Abb28913 Peptide #
11	101	91.8	20	4	ABB19524	Abb19524 Protein #
12	101	91.8	20	4	AAM67252	Aam67252 Human bon
13	101	91.8	20	4	AAM54871	Aam54871 Human bra
14	101	91.8	20	4	ABG48915	Abg48915 Human liv
15	101	91.8	20	4	AAM02833	Aam02833 Peptide #
16	101	91.8	20	ഹ	ABG36903	Abg36903 Human pep
17	53	48.2	184	ß	ABB90713	
	49	44.5	195	N	AAY35198	8
19	45	40.9	517	4	ABB57957	_
20	44	40.0	180	9	ADB09534	Adb09534 Alloiococ
21	44	40.0	296	4	AAU07104	Aau07104 Human nov
22	44	40.0	318	4	AAU07106	Aau07106 Human nov
23	44	40.0	370	Ŋ	ABB97599	Abb97599 Novel hum
24	44	40.0	375	4	AAU07109	Aau07109 Human nov
25	44	40.0	473	4	AAU07111	Aau07111 Human nov

Adc51944 Human pos Adu07115 Human nov Add5525 Human pro Adc10176 Human Nov Adu07123 Human nov Adu07129 Human nov Adu07129 Human nov Adc16270 Human mem Adc51943 Human pos Adu20555 Human gec Adw98554 H. pylori Abu37832 Protein e Ada37832 Protein e Ada37838 Protein e Adu35638 Enterococ Abu19638 Protein e Adu3634 Protein e Adu3634 Protein e Adu3634 Protein e Adu14481 Protein e	Pro
ADC51944 AAU07115 ADA55525 ADC10176 AAU07123 AAU07123 AAU562943 AAU565943 AAU20555 AAW96554 ABU37832 AAU33499 ABU33638 AAU33638 AAU33638	ABU33247 ABB17531
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ALIGNMENTS

Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation; antigenic fragment. Human cystatin-8 (Zcys8) antigenic fragment #3. AAU79855 standard; peptide; 22 AA. 01-SEP-2000; 2000US-0230230P. 29-AUG-2001; 2001WO-US026868. (first entry) (ZYMO) ZYMOGENETICS INC.

Bishop PD; Holloway JL, Gao Z,

WPI; 2002-383044/41.

Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.

Claim 2; Page 95; 100pp; English.

The invention describes an isolated mammalian cystatin-8 (Zcys8) polypeptide (I). (I) is useful for: inhibiting the thrombotic events protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm motility and fertilisation; and as antigonic peptides to generate antibodies. Zcys8 is useful as research reagent for characterising sites of interaction between Zcys8 and its receptor. Zcys8 is useful in enhancing fertilisation during assisted reproduction in humans and in animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcys8. The antibodies are also useful to isolate large

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            46; Indels 10; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7; Gaps
                "DD72, a novel mouse gene implicated in the early stage of ectopic ossification.",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
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17.6%; Score 112.5; DB 11; Length 146;
Best Local Similarity 26.1%; Pred. No. 0.00034;
Matches 23; Conservative 20; Mismatches 38; Indels 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Match 17%; Score 113; DB 11; Length 148; Local Similarity 28.2%; Pred. No. 0.00031; les 29; Conservative 18; Mismatches 46; Indels 10
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Submitted (APR-2002) to the EMBL/GenBank/DDBJ databases.
EMBL; BC027680; AA417680.1; -.
EMBL; BC027680; APR-27680.1; -.
GO; GO:0004869; F:cysteine protease inhibitor activity; IEA.
InterPro; IPR000010; Cystatin.
Pfam; PF00031; cystatin; 1.
NON_TER
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GO; GO:0004669; F:cysteine protease inhibitor activity; IEA.
InterPro; IPR000110; Cystein.
InterPro; IPR001113; StefinA.
PRam; PF00031; Cystatin; 1.
PRINTS; PR00225; STEFINA.
SMART; SM00043; CY; 1.
PROSITE; PS00287; CYSTATIN; 1.
SEQUENCE 148 AA; 16451 MW; 637534CBFC5AA179 CRC64;
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                                                                                                                                                                                                                   Straugherg R.;
Submitted (MAR.2003) to the EMBL/GenBank/DDBJ databases.
EMBL; AB036743; BAA95411.1; -.
EMBL; BC048364; AAH48364.1; -.
HSSP; P01034; 1G96.
                                                                                          Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
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Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RIKEN cDNA 1110017E11 gene (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-0CT-2002 (TrEMBLrel. 22, Created)
01-0CT-2002 (TrEMBLrel. 22, Last seq
01-JUN-2003 (TrEMBLrel. 24, Last ann
                                                                                                                                                       SEQUENCE FROM N.A.
STRAIN=FVB/N; TISSUE=Salivary gland;
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Ikegawa S., Nakamura Y.;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus musculus (Mouse).
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08K397
AC 08K39
AC 08K39
DT 01-0C
DT 01-0C
DT 01-0C
DT 01-0C
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116 GOOEKLRCNFELLEVPWKNTTOLLKHDC 143

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Search completed: March 18, 2004, 14:21:23 Job time : 70.1071 secs
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Mus musculus (Mouse)
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                                                                                                                                  SEQUENCE
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                                                                                                                                                                                                                                                                                                                                  8 KTFLSVHEVMAVENYAKDSLQMITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVE 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8 KTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVE
                                                                                                                                                                                                                                                                                          Gapa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN=C57; TISSUB=Testis;
Li Y., Friel P.J., Griswold M.D.;
"Molecular cloning and characterization of cystatin SC and cystatin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota, Metaza, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
NCBI_TaxID=10090;
'Functional annotation of a full-length mouse cDNA collection.";
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9
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                                                                                                                                                                                                                                             Length 130;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GO; GO:0004869; F:cysteine protease inhibitor activity; IEA.
InterPro; IPR00010; Cystatin.
Pfam; PF00031; cystatin; 1.
SEQUENCE 130 AA; 15076 MW; DD34930B64AFE58F CRC64;
                                                                                 MGD; MGI:1929859; 8030411F24Rik.
GO; GO:0004869; F:cysteine protease inhibitor activity; IEA.
InterPro; IPR000010; Cystatin.
Fran; Pfan; Po0031; Cystatin; 1.
SMART; SM00043; CY; 1.
SEQUENCE 130 AA; 14947 MW; DD2F930B64B4E584 CRC64;
                                                                                                                                                                                                                                                                                          45; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TE-1, new members of the cystatin family.";
Submitted (OCT-2001) to the EMBL/GenBank/DDBJ databases
EMBL, AF440735; AAL30841.1;
GGB, MGI:1925859; 8030411F24Rik.
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01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
1700006F03Rik protein (Cystatin TB-1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                             ; Score 121; DB 11;
; Pred. No. 3.8e-05;
28; Mismatches 45;
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                      Nature 409:685-690(2001).
EMBL; AK020193; BAB32024.1; -.
HSSP; P01034; 1G96.
                                                                                                                                                                                                                                               18.9%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
STRAIN=C57; TISSUE=Testis;
                                                                                                                                                                                                                                                                                          Conservative
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les 30; Conservative
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Best Local Similarity
Matches 30; Conserv
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089VII3
1D AC Q8VII
DT 01-MAD DT 01-
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ID Q9
AC Q9
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DT 01
DT 01
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Mandonnes T. Hara A., Shibata K., Yoshino M., Itoh M., Ishii Y., Arakawa T., Hara A., Shibata K., Yoshino M., Itoh M., Ishii Y., Arakawa T., Hara A., Shibata K., Konno H., Adachi J., Fukuda S., Alaawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I., Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R., Radota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T., Ishichmann W., Gasterland T., Gissi C., King B., Kochiwa H., Ruchl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J., Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T., Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G., Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F., Chemann M., Hume D.A., Kamiya M., Lee N.H., Lyons P., Marchioni L., Mashima J., Mondone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N., Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F., Suzuki H., Toyo-oka K., Wang K.H., Weitz C., Whittaker C., Wilming L., Hayashizaki Y., Murcional annotation of a full-length mouse cDNA collection.",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    26 SLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK--PETTNCVP 83
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN=C57; TISSUB=Testis;
Li Y., Friel P.J. Griswold M.D.;
Molecular cloning and characterization of cystatin SC and cystatin TE-1, new members of the cystatin family.";
Submitted (OCT-201) to the EMBL/GenBank/DDBJ databases.
EMBL; AR440737; AAL30843.1;
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus.
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus.
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GO; GO:0004669; F:cysteine protease inhibitor activity; IEA.
InterPro; IPR000010; Cystatin.
Pfam; PF0031; Cystatin; 1.
SEQUENCE 128 AA; 15036 MW; 40AFD001038555F0A CPCA.
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01-0CT-2000 (TrEMBLrel. 15, Last sequence update)
01-UTN-2003 (TrEMBLrel. 24, Last annotation update)
0272 protein (Similar to cystatin 10) (Chondrocytes)
CST10 OR DD72.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            / Match 17.9%; Score 114.5; DB 1. Local Similarity 29.7%; Pred. No. 0.00018; les 27; Conservative 20; Mismatches 41.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     84 QERELHKQVNCFFSVPAVPWFEQYKILNKSC 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OEGPGERKVRCTYIVETEAWVTKFTILNSTC 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       148 AA.
                                                                                                                                                                                                                           STRAIN=C57BL/6J; TISSUE=Testis;
MEDLINE=21085660; PubMed=11217851;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
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Cystatin SC.
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                                                                                                                                                                                                                                                                                                              20 ENYAKDSLQWITDQYNKESDDKYHPRIPRVLKVQRQVTDHLEYHLNVEMQWTTCQK---P 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20 ENYAKDSLQWITDQYNKESDDKYHPRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK---P 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13 EEGVQDALKFAVAEFNKASNDMYIHRVSKVVKVQKQVVAGIKYIVTVQMGRTSCRKGGAE 72
                                                                                                                                                                                                                                                                                                                              13 EEGVQDALKFAVAEFNKASNDMYIHRVSKVVKVQKQVVAGIKYIVTVQMGRTSCRKGGAE 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   24; Mismatches 36; Indels 10; Gaps
                                                                                                                                                                                                                                                                                  Gaps
                                   JISSUBBLIVE.

JISOBELLY, LAO H., YE X., Li Y., Lou J.;

"Molecular cloning and sequence analysis of cystatin cDNA from two species of sturgeons.";

Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.

EMBL, AR314610; AAK16731.1; -.

HSSP; P01038; 1A90.

GO: GO004865; F:cysteine protease inhibitor activity; IEA.

Interpro; IPR000010; Cystatin.

PROSITE; PR00031; Cystatin; 1.

SMART; SM00043; CY; 1.

PROSITE; PS00287; CYSTATIN; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bai J., Lao H., Ye X., Li Y., Lou J.;
"Molecular cloning and sequence analysis of cystatin cDNA from two species of sturgeons.";
Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; AF334611; AAK16732.1;
HSSP; P01038; 1A90.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukāryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Chondrostei; Acipenseriformes; Acipenseridae;
                                                                                                                                                                                                                                                                                  10;
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                                                                                                                                                                                                                                                      Length 112;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GO; GO:0004869; F:cysteine protease inhibitor activity; IEA. InterPro; IPR00010; Cystatin. Pfam; PF00031; cystatin; 1. PROSITE; PS00287; CYSTATIN; 1.
                                                                                                                                                                                                                                                  21.7%; Score 139; DB 13; Length 11. 32.0%; Pred. No. 3.9e-07; ive 24; Mismatches 36; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            77 ETTNC----VPQERELHKQVNCFFSVFAVPWFEQYKILNKSCS 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KIELCAFHDVP---ELAKTSTCTFEVVSRLWIPETKLVKNTCT 112
                                                                                                                                                                                                                                                                                                                                                                         77 ETTNC----VPQERELHKQVNCFPSVPAVPWFBQYKILNKSCS 115
                                                                                                                                                                                                                                                                                                                                                                                          3 KIELCAFHDVP---ELAKTSTCTFEVVSRLWIPETKLVKNTCT 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        112 AA; 12231 MW; 48ECEBFED8A08C00 CRC64;
                                                                                                                                                                                                                         SEQUENCE 112 AA; 12231 MW; 48ECEBFED8A08C00 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-JUN-2001 (TrEMBLrel. 17, Last sequence update) 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21.7%; Score 139; DB 13; 32.0%; Pred. No. 3.9e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Acipenser schrenckii (Amur sturgeon)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-JUN-2001 (TrEMBLrel. 17,
                                                                                                                                                                                                                                                                   Local Similarity 32.0%
Les 33; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   33; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cystatin (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=111304;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
[1]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
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                                                                                                                                                                                                                                                     Query Match
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Q98SR3
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RESULT 10

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          23 KEFLDVTKDL---DYFVASVEFAVAQFNDNNSEENTYRLLEVGRAQKK-TWTMIFLMDLE 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8 KTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVE
                                                                                                                                                                                         Bukaryota, Merazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Butheria, Rodentia, Sciurognathi, Muridae, Murinae, Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6; Gaps
                                                                                                                                                                                                                                                                                                                            STRAIN=Sprague-Dawley; TISSUE=Testis;
Li Y., Friel P.J., Griswold M.D.;
"Molecular cloning and characterization of cystatin SC and cystatin
TE-1, new membors of the cystatin family.";
Submitted (OCT-2001) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  68 MOWITCOKPETI -- NCVPQERELHKQVNCFFSVFAVPWFEQYKILNKSC 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
19.1%; Score 122; DB 11; Length 130;
Best Local Similarity 27.5%; Pred. No. 3e-05;
Matches 30; Conservative 28; Mismatches 45; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL, AF442205; AAL35350.1; -.
GO; GO:0004869; F:cysteine protease inhibitor activity; IEA
InterPro; IPR000010; Cystatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pfan; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
SEQUENCE 130 AA; 14981 MW; 7A752359860989C9 CRC64;
Q8VIH8 PRELIMINARY; PRT; 130 AA. Q8VIH8; 01-MAR-2002 (TrEMBLrel. 20, Last sequence update) 01-MAR-2002 (TrEMBLrel. 20, Last sequence update) 01-UNA-2003 (TrEMBLrel. 24, Last annotation update)
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Last annotation update)
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MEDLINE=21085660; PubMed=11217851;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Created)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                  Rattus norvegicus (Rat).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8030411F24Rik protein.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                     NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hayashizaki Y.;
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Q98SR4;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            94
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2 PYQARKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       YHLNVEMQWTTCQK--PETTNCV-PQERELHKQVNCFFSVFAVPWFEQYKILNKSC 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
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Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                        13;
                                                                                                                                                                                                                                                                                                                                                                    29.5%; Score 188.5; DB 11; Length 141; 34.5%; Pred. No. 2.8e-12; tive 25; Mismatches 38; Indels 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match

26.0%; Score 166.5; DB 11; Length 140;

Best Local Similarity 33.3%; Pred. No. 6e-10;

Matches 35; Conservative 24; Mismatches 43; Indels 3;
Strausberg R.;
Submitted (MAR-2003) to the EMBL/GenBank/DDBJ databases.
EMBL; BC048681; AAd48681.1; -.
GO; GO: 0004869; F: C98teine protease inhibitor activity; IEA.
InterPro; IPR00010; Cystatin.
InterPro; IPR003243; Cystatin.
Fram; PF000131; cystatin. C/M.
Fram; PF000131; Cystatin. C/M;
Srocom; B000133; Cystatin. C/M; 1.
SMART; SM00043; CY; 1.
SRQUENCE 141 AA; 16825 MW; C20FA0DBA884951F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GO; GO:0004869; F:cysteine protease inhibitor activity; IEA.
InterPro; IPR00010; Cystatin.
Pfam; PF00031; cystatin; 1.
PROSITE; PS00287; CY: 1.
PROSITE; PS00287; CY: 1.
21 140 CYSTATIN C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KPET -- TNC-VPQERELHKOVNCFFSVFAVPWFEOYKILNKSCSS 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | : | | : | | : | | : | | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995 | 3995
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Last annotation update)
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MEDLINE=21010502; Pubmed=11144350;
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Neuron 28:385-397(2000).
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15517 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; AF311741; AAG40283.1; -.
HSSP; P01034; 1G96.
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                                                                                                                                                                                                                                                                                                                                                                                                                                        40; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mus musculus (Mouse)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=10090;
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COBENSO
AC 09EPX9
AC 09EPX9
DT 01-M
DT 01-J
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Q80Y72
ID Q80Y
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             SARARARARAS
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15 EVMAVENYAKDSLOWITDOYNKESDDKYHFRIFRVLKVORQVTDHLEYHLNVEMOWTTCO 74
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                                                                                         Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus.
NCBI_TaxID=10090;
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Acipenser sinemsis (Chinese sturgeon).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Actinopterygii, Chondrostei, Acipenseriformes, Acipenseridae,
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GO; GO:0004869; F:cysteine protease inhibitor activity; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           41; Indels
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Submitted (MAR-2003) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         75 KPET -- TNCVPQERELHKQVNCFFSVFAVPWFEQYKILNKSC 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                96 KNETKKASCPLQSSKLKKSLICKSLIYSVPWMNYYQLWNNSC 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pfan; PF00031; cystatin; 1.
ProDom; PD001231; Cystatin_C/M; 1.
SMART; SM00043; CY; 1.
SEQUENCE 140 Aa; 16199 MW; 32633E99C4697DA0 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-JUN-2001 (TrEMBLrel. 17, Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
01-JUN-2003 (TrEMBLrel. 24, Created)
01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
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23.4%; Score 149.5; DB 1:
Best Local Similarity 30.4%; Pred. No. 3.8e-08;
Matches 31; Conservative 27; Mismatches 41.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           112 AA
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InterPro; IPR003243; Cystatin_C/M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and mouse cDNA sequences."
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                                                    Cystatin-like 1.
Mus musculus (Mouse)
                                                                                                                                                                     SEQUENCE FROM N.A.
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NCBI_TaxID=61970;
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PRELIMINARY;

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SEQUENCE
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                       Q9DAP1
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  D9DAP1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22 LPYQARKKTFLSVHBVMAVBNYAKOSLQMITDQYNKESDDKYHFRIFRVLKVQRQ----- 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61 EYHLNVEMQWTTCQKPETTNCVPQERELHKQVNCFFSVFAVPWFEQYKILNKSCSSD 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   --- OVNCFFSVFAVPWFEOYKILNKSCSSD 103
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Bukaryota; Merazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
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                                                                                                                                                                    Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Butheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               64.3%; Score 411.5; DB 4; Length 103; 70.1%; Pred. No. 4e-36; 1ive 0; Mismatches 0; Indels 35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN-Sprague-Dawley;
Hamil K.G., Hall S.H.;
Hamil K.G., Hall S.H.;
Submitted (APR-2002) AAN21709.1; -.
GO; GO:0004869; F:cysteine protease inhibitor activity; IEA.
InterProc; IPR00010; Cystatin.
Fran, Fround Cystatin.
SMART; SM00043; CY; 1.
SRQUENCE 139 AA; 16686 MW; E1E36DB786B4D08C CRC64;
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                                                                                                                                                                                                                                                                                                                                                          EMBL; AF33481; AAL71992.1; -. GO; GO:0004869; F:cysteine protease inhibitor activity; IEA. InterPro; IPR000010; Cystatin.
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                                                                                                                                                                                                                                                                                                                                                                                                                                       Pfam; PF00031; cystatin; 1.
SEQUENCE 103 AA; 12285 MW; 05DD92C47387B022 CRC64;
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Last sequence update)
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103 AA
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PRELIMINARY;
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                                                                                            01-JUN-2003 (TrEMBLrel. SC13delta.
                                                                     (TrEMBLrel.
                                           (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rattus norvegicus (Rat)
                                                                                                                                             Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
les 82; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
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                                                                                                                                                                                                                  NCBI_TaxID=9606;
                                                01-MAR-2002
                                                                     01-MAR-2002
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008K5A3
10 008K5
AC 008K5
DT 01-C
DT 
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REALINGSTBL/661, TISSUB=Testis;

REALINGSTBL/661, TISSUB=Testis;

REALINGSTBL/661, PubMed=11217851;

REALINGSTBL/661, PubMed=11217851;

REALINGSTBL/661, PubMed=11217851;

RA Arakawa T., Hara A., Eukunishi Y., Konno H., Adachi J., Fukuda S., Alinagawa A., Shibata Y., Konno H., Adachi J., Fukuda S., Alizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I., Ra Aito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R., Radota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T., RA Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H., Rahl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J., Rachima M., Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G., Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F., Racomstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M., Bult C., Retcher C., Fujita M., Gariboldi M., Lons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P., Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N., All Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F., Manshaw-Boris A., Yoshida K., Hasesgawa Y., Kawaji H., Kohtsuki S., Marsachizaki V., Vanshaw-Boris A., Yoshida K., Hasesgawa Y., Kawaji H., Kohtsuki S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
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Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
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InterPro; IPR000010; Cystatin.
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                                                                                           01-UNN-2001 (TrEMBLrel. 17, Created)
01-UUN-2001 (TrEMBLrel. 17, Last sequence update)
01-UUN-2003 (TrEMBLrel. 24, Last annotation update)
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     141 AA
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01-JUN-2003 (TrEMBLrel. 24, Last seq
01-OCT-2003 (TrEMBLrel. 25, Last ann
RIKEN cDNA 1700006C19 gene.
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EMBL; AK005665; BAB24175.1; -.
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SMART; SM00043; CY; 1.
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PRELIMINARY;
                                                                                                                                                                                                                                                                       .700006C19Rik protein.
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GenCore version 5.1.6
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OM protein - protein search, using sw model

March 18, 2004, 14:05:55 ; Search time 70.1071 Seconds (without alignments) 526.560 Million cell updates/sec Run on:

US-09-941-314-4 640 1 LPYQARKKTFLSVHEVMAVE......VFAVPWFEQYKILNKSCSSD 117 Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

1017041 Total number of hits satisfying chosen parameters: 1017041 segs, 315518202 residues Searched:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database :

SPTREMBL_25:*
1: Sp_archea:*
2: Sp_bacteria:*
3: Sp_tung:*
4: Sp_invertebrate:*
5: Sp_maman:*
5: Sp_maman:*
5: Sp_mhc:*
5: Sp_mhc:*
5: Sp_mhc:*
5: Sp_nhc:*
6: Sp_nhc:*

sp_virus:*
sp_vertebrate:*
sp_unclassified:* sp_rvirus:*
sp_bacteriap:*
sp_archeap:* sp_plant:* sp_rodent:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

STIMMARTES

	Description	Q8wxu6 homo sapien	Q8wxu5 homo sapien	Q8k5a3 rattus norv	Q9dap1 mus musculu	Q80zn5 mus musculu	Q9epx9 mus musculu	Q80y72 mus musculu	Q98er4 acipenser s	Q98sr3 acipenser s	Q8vih8 rattus norv	Q9cx46 mus musculu	Q8vii3 mus musculu	Q9dan8 mus musculu	Q9jm84 mus musculu	Q8k397 mus musculu	Q8vhc1 rattus norv
SUMMAKIES	ID	Q8WXU6	QBWXUS	Q8K5A3	Q9DAP1	Q80ZN5	Q9EPX9	Q80Y72	Q98SR4	Q98SR3	QBVIHB	Q9CX46	Q8VII3	Q9DAN8	Q9JM84	Q8K397	Овинст
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	Query Match Length DB	138	103	139	141	141	140	140	112	112	130	130	130	128	148	146	149
de	Query Match	100.0	64.3	56.2	29.5	29.5	26.0	23.4	21.7	21.7	19.1	18.9	18.9	17.9	17.7	17.6	17.6
	Score	640	411.5	360	188.5	188.5	166.5	149.5	139	139	122	121	121	114.5	113	112.5	112.5
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RESULT Q8WXU5

Q9dibl mus musculu Q7z4j8 homo sapien Q8yii2 rattus norv Q8jii2 brachdanio Q9qwl5 mus musculu Q9ty65 onchocerca O16159 brugia mala Q9nh95 litomosoide Q9d564 mus musculu Q25620 onchocerca P90698 brugia mala Q12700 debaryomyce Q1710 debaryomyce Q1710 debaryomyce Q1710 debaryomyce Q1710 acanthochei Q909a1 onchocerca Q8015 xenopus lae Q8ibf4 plasmodium Q63581 rattus norv Q8nh7 homo sapien Q95k43 macaca fasc Q7zy91 xenopus lae Q815x0 plasmodium Q80165 xenopus lae Q7yrp6 sus scrofa	Quext, nomo saplen P70517 rattus norv Q81b61 plasmodium Q81160 bacillus ce
Q9D1B1 Q7Z4JB Q8VIIZ Q8VIIZ Q8QVIZ Q9QWE5 Q9TY65 Q9TY65 Q9TY65 Q9TY65 Q9DZ64 Q9DZ64 Q9DZ64 Q9DZ64 Q9DZ64 Q8IBP4 Q8IBP4 Q8IBP4 Q8IBP4 Q8IBP7 Q8IBF4 Q8IBFX Q8IBFX Q8IES Q9OIES	Q8WXK7 P70517 Q8IB61 Q81160
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20 ENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK--PE 77
                                                                                                                                                                                SEQUENCE FROM N.A.
MEDLINE=97054523; PubMed=8898820;
Wei L.H., Walker L.C., Levy E.;
Wei L.H., Walker L.C., Levy E.;
Wey Estantion in an animal model of cerebrovascular beta-amyloidosis.";
Stroke 27:2080-2085(1996).
-I- FUNCTION: As an inhibitor of cysteine proteinases, this protein is thought to serve an important physiological role as a local regulator of this enzyme activity.
-I- SIMILARITY: Belongs to the cystatin family.
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                                                                                                    Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi, Mammalia, Eutheria, Primates, Catarrhini, Cercopithecidae, Cercopithecinae, Macaca.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               th 24.2%; Score 155; DB 1; Length 146; Similarity 33.7%; Pred. No. 5.6e-09; 34; Conservative 21; Mismatches 42; Indels
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SECONDARY AREA OF CONTACT.
BY SIMILARITY.
BY SIMILARITY.
W, FOBSBB774A29DF26 CRC64;
           15-JUL-1998 (Rel. 36, Created)
15-JUL-1998 (Rel. 36, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Macaca mulatta (Rhesus macaque).
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85 SE
109 BY
143 BY
15857 MW;
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                                                            Cystatin C precursor.
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Matches
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Search completed: March 18, 2004, 14:16:08 Job time : 13.9286 secs

46 EEGVRRALDFAVSEYNKASNDMYHSRALQVVRARKQIVAGVNYFLDVELGRTTCTKTQPN 105

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Straubberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,

Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,

Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

Bottlenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,

Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,

Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,

Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Glbbs R.A.,

Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,

Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,

Butterfield Y.S.N. Krzywinski M.I., Skalska U., Smailus D.E.,

Butterfield Y.S.N. Krzywinski M.I., Skalska U., Smailus D.E.,

"Generation and initial analysis of more than 15,000 full-length
Oliver K., Parker A., Patel R., Pearce T.A.V., Peck A.I.,
Phillimore B.J.C.T., Prathalingam S.R., Plumb R.W., Ramsay H.,
Rice C.M., Rose M.T., Scote C.E., Shownkeen R., Sims S.,
Skuce C.D., Smith M.L., Soderlund C., Steward C.A., Shlston J.B.,
Swann R.M., Sycamore N., Taylor R., Tee L., Thomas D.W., Thorpe A.,
Tracey A., Tromans A.C., Vaudin M., Wall M., Wallis J.M., Thorpe A.,
Whitchead S.L., Whittaker P., Williams L., Williams S.A.,
Wilming L., Wray P.W., Hubbard T., Durbin R.M., Bentley D.R., Beck S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Grubb A., Loefberg H., Barrett A.J.;
"The disulphide bridges of human cystatin C (gamma-trace) and chicken
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Protein inhibitors of cysteine proteinases. III. Amino-acid sequence of cystatin from chicken egg white.";
Hoppe-Seyler's Z. Physiol. Chem. 364:1487-1496(1983).
                                                                                                                                                                                              "The DNA sequence and comparative analysis of human chromosome 20."; Nature 414:865-871(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=84128015; PubMed=6365094;
Brzin J., Popovic T., Turk V.;
"Human cystatin, a new protein inhibitor of cysteine proteinases.";
Biochem. Biophys. Res. Commun. 118:103-109(1984).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE-84110059; PubMed-6662498;
Turk V., Brzin J., Longer M., Ritonja A., Bropkin M., Borchart U.,
Machleidt W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Grubb A., Loefberg H.; "Human gamma-trace, a basic microprotein: amino acid sequence and presence in the adenohypophysis."; Proc. Natl. Acad. Sci. U.S.A. 79:3024-3027(1982).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=21173909; PubMed=11276250;
Janowski R., Kozak M., Jankowska B., Grzonka Z., Grubb A.,
Abrahamson M., Jaskolski M.;
Abrahamson M., Jaskolski M.;
"Human cystatin C, an amyloidogenic protein, dimerizes through
three-dimensional domain swapping.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Natl. Acad. Sci. U.S.A. 99:16899-16903(2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             X-RAY CRYSTALLOGRAPHY (2.50 ANGSTROMS) OF 27-146.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Struct. Biol. 8:316-320 (2001)
                                                                                                                                                                                                                                                                                                           MEDLINE=22388257; PubMed=12477932;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE OF 27-146.
MEDLINE=82222268; PubMed=6283552;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  human and mouse cDNA sequences.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE OF 27-73.
                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
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VARIANT GLN-94
                                                                                                                                                                              Rogers J.;
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MEDLINE=92316504; PubMed=1352269;

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Abrahamson M., Jonsdottir S., Olafsson I., Jensson O., Grubb A.; "Hereditary cystatin C amyloid angiopathy: identification of the disease-causing mutation and specific diagnosis by polymerase chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR000010; Cystatin.
Pfam; PF00031; cystatin; 1.
SWART; SM00043; CY; 1.
PROSITE; PS00287; CYSTAIN; 1.
Thiol protease inhibitor; Amyloid; Signal; Disease mutation;
Polymorphism; 3D-structure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   24.2%; Score 155; DB 1; Length 146; 33.7%; Pred. No. 5.6e-09; Live 21; Mismatches 42; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CYSTATIN C.
REACTIVE SITE.
SECONDARY AREA OF CONTACT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     78 TINC-VPQERELHKQVNCFFSVFAVPWFEQYKILNKSCSSD 117
                                                                                                                                                                                                                         SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               146 AA
                                                                                                                                                                                                                                                                                                                                                               EMBL, X52555, CAA36497.1; -...
EMBL, M27891, AAA52164.1; -...
EMBL, M27890, AAA52164.1; JOINED.
EMBL, M27890, AAA52164.1; JOINED.
EMBL, X61681, CAA43856.2; JOINED.
EMBL, X61682, CAA43856.2; JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       AF319564; AAK11570.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AL121894; CAC05424.1; -. BC013083; AAH13083.1; -.
                                                                                                                                                                                                                                                                                                                                                    EMBL; X05607; CAA29096.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               34; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
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Genew; HGNC:2475; CST3.
MIM; 604312; -.
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37
85
109
143
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PDB; 1G96; 06-APR
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CYTC_MACMU
ID _CYTC_MACMU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MIM; 105150;
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EMBL;
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Bailey J., Barlow K.F., Bates K.N., Beard L.M., Beare D.M.,
Beasley O.P., Bird C.P., Blakey S.E., Bridgeman A.M., Brown A.J.,
Burxill W.D., Bultler A.D., Carder C., Carter N.P.,
Chapman J.C., Clamp M., Clark G., Clark L.N., Clark S.Y., Clee C.M.,
Clegg S., Cobley V.E., Collier R.E., Connor R.E., Corby N.R.,
Clegg S., Cobley V.E., Collier R.E., Connor R.E., Corby N.R.,
Coulson A., Coville G.J., Deadman R., Dhami P.D., Dunn M.,
Blington A.G., Frankland J.A., Fraser A., French L., Garner P.,
Crafham D.V., Griffiths C., Griffiths M.N.D., Gwilliam R., Hall R.E.,
Hammond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J.,
Huckle E., Hunt A.R., Hunt S.E., Jekosch K., Johnson C.M., Johnson D.,
Kay M.P., Kimberley A.M., King A., Knights A., Laird G.K., Lawlor S.,
Lehvaeslaino M.H., Leversha M.A., Lloyd C., Lloyd D.M., Lovell J.D.,
Marsh V.L., Martin S.L., McConnachie L.J., McLay K., McMurray A.A.,
Milne S.A., Mistry D., Moore M.J.F., Mullikkn J.C., Nickerson T.,
Oliver K., Parker A., Patel R., Pearce T.A.V., Peck A.I.,
Phillimore B.J.C.T., Presthalingam S.R., Plumb R.W., Ramssay H.,
Sycanore N.J.C., Taylor R., Tee L., Thomas D.W., Thorpe A.,
Swann R.M., Sycamore N., Taylor R., Tee L., Thomas D.W., Thorpe A.,
Anithehead S.L., Whittaker P., Willey D.L., Williams L., Williams S.A.,
Williming L., Wray P.W., Hubbard T., Durbin R.M., Bentley D.R., Beck S.,
An Hining L., Wray P.W., Hubbard T., Durbin R.M., Bentley D.R., Beck S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lsb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OVTDHLEYHLNVEMOWTTCQKPETTN - CVPQERELHKOVNCFFSVFAVPWFEQYKILNK 112
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                                                                                                                                                                                                                                                                                                                                                                                                                        "The DNA sequence and comparative analysis of human chromosome 20.";
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SECONDARY AREA OF CONTACT (FOTENTIAL).
BY SIMILARITY.
BY SIMILARITY.
N-LINKED (GLCNAC. ..) (FOTENTIAL).
N-LINKED (GLCNAC. ..) (FOTENTIAL).
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(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
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N-LINKED (GLCNAC. . .)
N-LINKED (GLCNAC. . .)
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                                                                                                                                                                                                                                                                                                                                                                                                                                      Nature 414:665-871(2001).
-!- SUBCELLULAR LOCATION: Secreted (Potential).
-!- SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24.6%; Score 157.5; DB 1
26.2%; Pred. No. 3.6e-09;
iive 30; Mismatches 37
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InterPro; IPR000010; Cystatin.
PROSITE; PS00287; CYSTATIN; FALSE_NEG.
Thiol protease inhibitor; Signal.
119 POTENTIAL.
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154
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54
57
86
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118
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165 AA;
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DISULFID
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MEDLINE=21668749; PubMed=11780052;
MEDLINE=21668749; PubMed=11780052;
Deloukas P., Matthews D.H., Ashuret J., Burton J., Gilbert J.G.R.,
Jones M., Stavrides G., Almeida J.P., Babbage A.K., Bagguley C.L.,
A dones M., Barlow K.F., Bates K.N., Beard L.M., Beard D.M.,
Basiley O.P., Bird C.P., Blakey S.E., Bridgeman A.M., Brown A.J.,
Chapman J.C., Clamp M., Clark G., Clark L.N., Clark S.Y., Clee C.M.,
Chapman J.C., Clamp W.E., Collier R.E., Connor R.E., Corby N.R.,
Coulson A., Coville G.J., Deadman R., Dhami P.D., Dunn M.,
Blington A.G., Frankland J.A., Fraser A., French L., Garner P.,
Grafham D.V., Griffiths C., Griffiths M.N.D., Gwilliam R., Hall R.E.,
A Hammond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J.,
A Huckle E., Hunt A.R., Hunt S.E., Jekosch K., Johnson C.M., Johnson C.M., Johnson C.M., Levversha M.A., King A., Knights A., Laird G.K., Lawlor S.,
Lehvaeslaiho M.H., Leversha M.A., Lloyd C., Lloyd D.M., Lovell J.D.,
Marsh V.L., Martin S.L., McConnachie L.J., McLay K., McMurray A.A.,
Milne S.A., Mistry D., Moore M.J.F., Mullikin J.C., Nickerson T.,
                                                          21-JUL-1986 (Rel. 01, Created)
01-AUG-1988 (Rel. 08, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
Cystatin C precursor (Neuroendocrine basic polypeptide) (Gamma-trace)
(Post-gamma-globulin).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Abrahamson M., Olafsson I., Palsdottir A., Ulvsbaeck M., Lundwall A., Jensson O., Grubb A.; "Structure and expression of the human cystatin C gene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Levy E., Lopez-Otin C., Ghiso J., Geltner D., Frangione B.; "Stroke in Icelandic patients with hereditary amyloid angiopathy is related to a mutation in the cystatin C gene, an inhibitor of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Dickinson D.P., Hewett-Emmett D., Thiesse M.; "Acquisition of complex patterns of differential expression in epithelial cell populations during the evolution of type 2 cystatin
                                                                                                                                                                                                                                                                                                                    TISSUE-Placenta; MEDLINE-87219149; PubMed-3499457; MEDLINE-87219149; PubMed-3499457; Abrahamson M., Grubb A., Olafeson I., Lundwall A.; Grubb A., Molecular cloning and sequence analysis of cDNA coding for the precursor of the human cysteine proteinase inhibitor cystatin C.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
MEDLINE=89350949; PubMed=2764935;
Satroh E., Sabatini L.M., Eddy R.L., Shows T.B., Azen E.A.,
Isemura S., Sanada K.;
"The human cystatin C gene (CST3) is a member of the cystatin gene
family which is localized on chromosome 20.";
                                                                                                                                                                                                             Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (NOV-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            lochem. Biophys. Res. Commun. 162:1324-1331(1989).
                      146 AA.
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MEDLINE=89235594; PubMed=2541223;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TISSUE=Leukocyte;
MEDLINE=90303202; PubMed=2363674;
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                                                                                                                                                                                                                                                                                                                                                                                                                             FBS Lett. 216:229-233(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Biochem. J. 268:287-294(1990)
                    STANDARD;
                                                                                                                                                                                           Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cysteine proteases."
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                 CYTC HUMAN P01034;
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HUMAN
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28-FEB-2003 (Rel. 41, Last annotation update)
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InterPro; IPR000010; Cystatin.
Pfam; PF00031; Cystatin; 1.
SMART; SM00043; CY; 1.
PROSITE; PS00287; CYSTATIN; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; U52028; AAB64051.1; -.
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               Cystatin C precursor
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Q9H114;
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Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SLOWITDOYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK--PETTNCVP 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3; Gaps
                                                                                                                                                                                                                                                                       MEDLINE 89076505; PubMed 3202964; Saithies O., Maeda N.; Saitch E., Isemura S., Sanada K., Kim H.-S., Smithies O., Maeda N.; "Cystatin superfamily: Evidence that family II cystatin genes are evolutionarily related to family III cystatin genes."; Biol. Chem. Hoppe-Seyler 369:191-197(1988).

-!- FUNCTION: Thiol procease inhibitor.
-!- SUBCELULIAR LOCATION: Secreted.
-!- SIMILARITY: Belongs to the cystatin family.
                                                                 PRELIMINARY SEQUENCE OF 25-141.

PRELIMINARY SEQUENCE OF 25-141.

Isemura S., Saitoh E., Sanada K., Isemura M., Ito S.;

Isemura S., Saitoh E., Sanada K., Isemura M., Ito S.;

Characterization and amino acid sequence of a new acidic cysteine proteinase inhibitor (cystatin SA) structurally closely related to cystatin S, from human whole saliva.";

(In) Turk V. (eds.);

(In) Turk V. (eds.);

(In) Turk V. (eds.);

Walter de Gruyter, Berlin and New York (1986).
"Characterization and amino acid sequence of a new acidic cysteine
                 proteinase inhibitor (cystatin SA) structurally closely related to cystatin S, from human whole saliva.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1; Length 141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GO; GO:0004669; F:cysteine protease inhibitor activity; TAS. InterPro; IPR000010; Cystatin. Pfam; PF00013; cystatin; 1. SAMART: SM00043; CY: 1. PROSITE; PS00287; CYSTATIN; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    36; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CYSTATIN SA.
REACTIVE SITE.
SECONDARY AREA OF CONTACT.
BY SIMILARITY.
BY SIMILARITY.
W, EBS4915B1B977AA2 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            thiol protease inhibitor; Signal; Multigene family
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            t; Pred. No. 1.5e-09;
24; Mismatches 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                84 QER-ELHKQVNCFFSVFAVPWFEQYKILNKSC 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    107 HEQPELQKKQLCSFQIYEVPWEDRMSLVNSRC 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (Rel. 36, Created)
(Rel. 36, Last sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             25.1%; Score 160.5; 31.5%; Pred. No. 1.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; M19673; AAA36116.1; -...
EMBL; M19671; AAA36116.1; JOINED.
EMBL; M19672; AAA36116.1; JOINED.
EMBL; AL591074; CAC94784.1; -...
PIR; B29632; B29632.
HSSP; P01034; 1G96.
Genew; HGNC:2474; CST2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16445 MW;
                                                      102:693-704 (1987)
                                                                                                                                                                                                                                          [6]
SEQUENCE OF 25-141 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 141
32
80
104
138
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ID CYTC SAISC
AC 019093;
DT 15-JUL-1998
DT 15-JUL-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15-JUL-1998
15-JUL-1998
                                    cystatin S,
                                                        Biochem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SITE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   this protein is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20 ENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK--PE
Saimiri sciureus (Common squirrel monkey).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Platyrrhini; Cebidae; Cebinae; Saimiri.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=21638749; PubMed=11780052;
Deloukas P., Matthews L.H., Ashurst J., Burton J., Gilbert J.G.R.,
Jones M., Stavrides G., Almeida J.P., Babbage A.K., Bagguley C.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4,
                                                                                                                                                                                                                                                                                                               -i- FUNCTION: As an inhibitor of cysteine proteinases, this proteing to serve an important physiological role as a local regulator of this enzyme activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 146;
                                                                                                                                                                                                                                      ğ
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                                                                                                                                             SEQUENCE FROM N.A.
MEDLINE=97054523; PubMed=8898820;
Wei L.H., Walker L.C., Levy E.;
"Cystatin C. Icelandic-like mutation in an animal model
cerebrovascular beta-amyloidosis.";
Stroke 27:2080-2085(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROSITE; POUCEO; CISTAIN; 1.

Thiol protease inhibitor; Amyloid; Signal.

SIGNAL 1 26 EXTAIN C.

CHAIN 27 146 CYSTAIN C.

ACT SITE 37 37 SECONDARY AREA OF CONTACT.

SITE 81 85 SECONDARY AREA OF CONTACT.

DISULEID 99 109 BY SIMILARITY.

DISULEID 123 143 BY SIMILARITY.

SEQUENCE 146 AA; 15946 MW; 08196353C0306AA3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   78 TINCVPOER-ELHKOVNCFFSVFAVPWFEOYKILNKSCSSD 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    106 LDNCPFHEQPHLKRKAFCSFQIYSVPW-QGIMTLSKSTCQD 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25.0%; Score 160; DB 1;
ilarity 34.7%; Pred. No. 1.7e-09;
Conservative 21; Mismatches 41
                                                                                                                                                                                                                                                                                                                                                                                                              -!- SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28-FEB-2003 (Rel. 41, Created)
28-FEB-2003 (Rel. 41, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
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EVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQ
  12
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                                                                                                                                                                                                                                            A Straubberg R.D., Feingold E.A., Grouse L.H., Derge J.G.,

A Straubberg R.D., Colling F.S., Wagner L., Shenmen C.M., Schuler G.D.,

A Aleschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Blath N.K.,

A Hopking R.F., Jordan H., Moore T., Max S.I., Wang J., Hsiah F.,

A papeleron M., Soarse M.B., Bonaldo M.F., Casavant T.E., Scheetz T.B.,

B capleron M., Soarse M.B., Bonaldo M.F., Carninci P., Prange C.,

B Erownstein M.J., Usdin T.B., Tochhyuki S., Carninci P., Prange C.,

Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,

Raba S.S., McKwan P.J., McKernan K.J., Malek J.A., Gunzatne P.H.,

Rhichards S., Worley K.C., Hale S., Garcia A.M., Gabbs R.A.,

Richards S., Worley K.C., Hale S., Garcia A.M., Gabbs R.A.,

Rhiting M., Madan A., Young A.C., Shevchenko Y., Boulfard G.G.,

Rhiting M., Madan A., Young A.C., Shevchenko Y., Boulfard G.G.,

Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,

Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,

Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,

Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.,

Generation and initial analysis of more than 15,000 full-length

Proc. Natl. Acad. Sci. U.S.A., 99:16899-16903 (2002).

I FUNCTION: As an inhibitor of cysteine proteinases, this protein is requiator of this enzyme activity.

C.I. SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                  SEQUENCE FROM N.A.
STRAIN=LLS, and ISS;
MEDLINE=21363810; PubMed=11471062;
Bringer M.A. Thompson J., Conroy O., Xu Y., Yang F., Canniff J.,
Beeson M., Gordon L., Bennett B., Johnson T.E., Sikela J.M.;
High-throughput sequence identification of gene coding variants
within alcohol-related GTLS.";
Mamm. Genome 12:657-663(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25.1%; Score 160.5; DB 1; Length 140; 32.4%; Pred. No. 1.5e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CYSTATIN C.
REACTIVE SITE.
SECONDARY AREA OF CONTACT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15531 MW; 3A563406DD58D0F5 CRC64;
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BY SIMILARITY.

A -> G (IN REF. 1).

L -> F (IN REF. 1).
                                                                                                                                                                                                                                    MEDLINE=22388257; PubMed=12477932;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SMART; SM00043; ČY; 1.
PROSITE; PS00287; CYSTATIN; 1.
Thiol protease inhibitor; Signal.
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; AF483486; AAL90760.1; --
EMBL; AF483487; AAL90761.1; --
EMBL; BC002072; AAH02072.1; --
PIR; A36163; A36163.
HSSP; P01034; 1G96.
InterPro; IPR000010; Cystatin.
Pfam; PF00031; cystatin; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; M59470; AAA63298.1; -.
EMBL; U10098; AAB41056.1; -.
Gene 152:221-226(1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  140 AA;
                                                                                                                                                                                                                  SEQUENCE FROM N.A.
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ACT SITE
SITE
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7

Gaps

3,

Indels

; Pred. No. 1.5e-09, 24; Mismatches 44

Conservative

34;

Best Loca Matches

Local Similarity

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AMEDINE-E188849; Fubmeder 11/80052;
AMEDINE-E188849; Fubmeder 11/80052;
A Deloukas P., Matchews L.H., Aburst J., Babbage A.K., Bagguley C.L.,
A Deloukas P., Bartow K.F., Bates K.N., Beare D.M.,
Batley O.P., Bird C.P., Blakey S.E., Bridgeman A.M., Brown A.J.,
Beasley O.P., Bird C.P., Blakey S.E., Bridgeman A.M., Brown A.J.,
Buck D., Burrill W.D., Butler A.P., Carder C., Carter N.P.,
A Clegg S., Cobley V.E., Collier R.E., Connor R.E., Corby N.R.,
A clegg S., Cobley V.E., Corlier R.E., Connor R.E., Corby N.R.,
A lington A., Carffiths C., Griffiths M.N.D., Gwilliam R., Hall R.E.,
A lington A.G., Frankland J.A., Fraser A., Johnson D.,
A stham D.V., Griffiths C., Griffiths M.N.D., Gwilliam R., Hall R.E.,
A mamond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J.,
A hardley J.L., Match P.D., Ho S., Holden J.L., Howden P.J.,
AN M. Kimberley A.M., King A., Knights A., Laird G.K., Lawlor S.,
Lehvaeslaiho M.H., Leversha M.A., Lloyd C., Lloyd D.M., Lovell J.D.,
A Marsh V.L., Martin S.L., McConnachle L.J., McCardy H.A.,
A philliance B.J.C.T., Prathalingam S.R., Plunb R.W., Ramasy H.,
A philliance B.J.C.T., Prathalingam S.R., Plunb R.W., Rhowsen R., Sims S.,
Swuce C.D., Smith M.L., Scott C.E., Steward C.A., Shownkeen R., Sims S.,
Swann R.W., Sycamore N., Taylor R., Thomas D.W., Thorpe A.,
A Tracey A., Tromans A.C., Vaudin M., Walli M., Wallis J.W.,
Milning L., Wray P.W., Hubbard T., Durbin R.M., Bentley D.R., Beck S.,
A Milming L., Wray P.W., Hubbard T., Durbin R.M., Bentley D.R., Beck S.,
35 EADANEEGVRALDFAVSEYNKGSNDAYHSRAIQVVRARKQLVAGVNYFLDVEMGRTTCT 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Isemura S., Saitoh E., Sanada K., Minakata K.; "Identification of full-sized forms of salivary (S-type) cystatins (cystatin SN, cystatin SN, cystatin SA, and two phosphorylated forms of cystatin S) in human whole saliva and determination of phosphorylation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     comparative analysis of human chromosome 20.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-88185836; PubMed-3446578; Saitoh E., Kim H.-S., Smithies O., Maeda N.; altoh E., Kim H.-S., Smithies O., Maeda N.; "Human cysteine-proteinase inhibitors: nucleotide sequence analysis of three members of the cystatin gene family.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                           95 KSQTNLTDCPFHDQPHLMRKALCSFQIYSVPWKGTHSLTKFSCKN 139
                                                                                                              75 KPET--TNC-VPQERELHKQVNCFFSVFAVPWFEQYKILNKSCSS 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-MAR-1989 (Rel. 10, Created)
01-MAR-1989 (Rel. 10, Last sequence update)
08-FBB-2003 (Rel. 10, Last annotation update)
Cystatin SA precursor (Cystatin S5).
                                                                                                                                                                                                                                                                                                                                                                                                141 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=21638749; PubMed=11780052;
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MEDLINE=88139220; PubMed=3436950;
Isemura S., Saitoh E., Sanada K.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Biochem. 110:648-654(1991).
                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "The DNA sequence and co
Nature 414:865-871(2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sites of cystatin S.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gene 61:329-338(1987)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                        CYTT HUMAN
P092Z8; Q9UCQ7;
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26 SLOWITDOYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK--PETTNC-V 82
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            Coturnix coturnix japónica (Japanese quail).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi;
Archosauría, Aves, Neognathae, Galliformes, Phasianidae, Phasianinae,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
STRAIN=BALB/c; TISSUB=Brain;
MEDLINE=91054522; PubMed=2241983;
Solem M., Rawson C., Lindburg K., Barnes D.;
"Transforming growth factor beta regulates cystatin C in serum-free mouse embryo (SFME) cells.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN=129/Sv; TISSUE-Liver;
MEDLINE-95137392; PubMed=7835704;
Huh C., Nagle J.W., Kozak C.A., Abrahamson M., Karlsson S.;
"Structural organization, expression and chromosomal mapping of the mouse cystatin-C-encoding gene (Cst3).";
                                                                                                                                                                                      Gerhartz B., Engh R.A., Mentele R., Eckerskorn C., Torquato R., Wittman J., Kolb H.J., Machleidt W., Fritz H., Aucswald B.A.; Molail cystatin: isolation and characterisation of a new member of "Quail cystatin family and its hypothetical interaction with cathepsin
                                                                                                                                                                                                                                                                                    FEBS Lett. 412:551-558(1997).
--- FUNCTION: This protein binds tightly to and inhibits papain and cathepsin B.
--- SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 116;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REACTIVE SITE.
SECONDARY AREA OF CONTACT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PHOSPHORYLATION.
48248621053A2F70 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           35;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   26.5%; Score 169.5; DB 1
35.9%; Pred. No. 1.4e-10;
iive 21; Mismatches 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           83 POERELHKOVNCFFSVFAVPWFEQYKILNKSC 114
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-FEB-1996 (Rel. 33, Last sequence update) 10-OCT-2003 (Rel. 42, Last annotation update) Cystatin C precursor (Cystatin 3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ä.
                                                                                                                                                                                                                                                                                                                                                                                                                                            ol protease inhibitor; Phosphorylation.
                                                                                                                                                  TISSUE=Egg white;
MEDLINE=97420480; PubMed=9276465;
                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
PROSITE; PS00287; CYSTATIN; 1.
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01-FEB-1996 (Rel. 33, Last seq
10-OCT-2003 (Rel. 42, Last anno
                                                                                                                                                                                                                                                                                                                                                                HSSP; P01038; 1CEW.
InterPro; IPR000010; Cystatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13093 MW;
Cystatin (Egg-white cystatin)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 35.9°
Matches 33; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
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81
115
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 116 AA;
                                                                                          NCBI_TaxID=93934;
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SEQUENCE
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                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its most by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26 SLQWITDQYNKESDDKYHPRIPRVLKVQRQVTDHLEYHLNVEMQWTTCQKP--ETTNC-V 82
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            Dieckmann T., Mitschang L., Hofmann M., Kos J., Turk V.,
Auerswald E.A., Jeanicke R., Oschkinat H.;
"The structures of native phosphorylated chicken cystatin and of a
recombinant unphosphorylated variant in solution.";
J. Mol. Biol. 234:1048-1059(1993).
-!- PUNCTION: This protein binds tightly to and inhibits a variety of
thiol proteases including ficin, papain, and catheppsins B, C, H,
and L. Although isolated from egg white, it is also present in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROSITE; PS00287; CYSTATIN; 1.
Thiol protease inhibitor; Phosphorylation; Signal; 3D-structure.
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SECONDARY AREA OF CONTACT
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                                                                                                                                                                                        SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (Rel. 36, Created)
(Rel. 36, Last sequence update)
(Rel. 41, Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            116 AA
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MEDLINE=94087719; PubMed=8263912;
                                                                                                                                                                                                                                                                                                                                                                                                                      PDB; 1CEW; 31-JAN-94.
PDB; 1A67; 27-MAY-98.
PDB; 1A90; 17-UJN-98.
InterPro; 1PR000010; Cystatin.
Pfam; PP00031; cystatin; 1.
SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                                    EMBL; J05077; AAA48744.1; -
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108
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15-JUL-1998
28-FEB-2003
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CYT_COTJA
ID _ CYT_COTJA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5 Lett. 300:131-135 (1992). PruncTrON: As an inhibitor of cysteine proteinases, this protein is thought to serve an important physiological role as a local regularor of this enzyme activity. Known to inhibits cathepsin B,
                                                                       Cole T., Dickson P.W., Benard F., Averill F., Risbridger G., Gauthier F., Schreiber G., "The CDNA structure and expression analysis of the genes for the cysteine proteines inhibitor cystetin C and for beta 2-microglobulin
                                                                                                                                                                   [2]
SEQUENCE OF 8-127.
MEDLINE=90380276; PubMed=2400577;
Esnard F., Esnard A., Faucher D., Capony J.-P., Derancourt J.,
Brillard M., Gauthier F.;
"Rat cystatin C., the complete amino acid sequence reveals a site for
                                                                                                                                                                                                                                                                                                                                                                                                           TISSUE=Sertoli cells;
MEDLINE=92225121; PubMed=1563513;
MEDLINE=92225121; PubMed=1563513;
Barard A., Esnard F., Guillou F., Gauthier F.,
"Production of the cysteine proteinase inhibitor cystatin C by rat Sertoli cells.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   26.8%; Score 171.5; DB 1; Length 127; 33.3%; Pred. No. 9.9e-11; ive 24; Mismatches 43; Indels 3.
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REACTIVE SITE.
SECONDARY AREA OF CONTACT.
BY SIMILARITY.
BY SIMILARITY.
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78F70158B7925853 CRC64;
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                                                                                                                                                                                                                                                                                                                                       Gauthier F.;
                                                                                                                                                                                                                                                                                        [3]
SEQUENCE OF 8-49.
SECUENCE OF 8-49.
MEDLINE-88313020; PubMed=3044831;
ESDART A., ESDART F., FAUCHER D., GAUTHIER
"Two rat homologues of human cystatin C.";
FEBS Lett. 236:475-478(1988).
                                                                                                                                                                                                                                                                         3101. Chem. Hoppe-Seyler 371:161-166(1990)
                                                            MEDLINE=90092122; PubMed=2689174;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Thiol protease inhibitor; Signal.
                                                                                                                                                      Eur. J. Biochem. 186:35-42(1989)
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18 RE
66 SE
90 BY
124 BY
25 A
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PIR; S10587; S10587.
HSSP, P01034; 1G96.
InterPro; IPR000010; Cystatin.
PF00031; Cystatin; 1.
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                               SEQUENCE FROM N.A.
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PROSITE; PS00287;
NCBI_TaxID=10116;
                                            STRAIN=Buffalo;
                                                                                                                                        in rat brain.
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Cystatin precursor (Egg-white cystatin).
Gallus gallus (Chicken).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Grubb A., Loefberg H., Barrett A.J.;
"The disulphide bridges of human cystatin C (gamma-trace) and chicken
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Protein inhibitors of cysteine proteinases. III. Amino-acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bode W., Engh K., Musil D., Thiele U., Huber R., Karshikov A., Brzin J., Kos J., Turk V.; "The 2.0 A X-ray crystal structure of chicken egg white cystatin and its possible mode of interaction with cysteine proteinases.";
                                                                                                                                                                                                                                                                                                                                                 Colella R., Sakaguchi Y., Nagase H., Bird J.W.C.; "Chicken egg white cystatin. Molecular cloning, nucleotide sequence, and tissue distribution."; J. Biol. Chem. 264:17169(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE-83256421; PubMed-6409085;
Anastasi A., Brown M.A., Kembhavi A.A., Nicklin M.J.H., Sayers C.A.,
Sunter D.C., Barrett A.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDIINE-84178105; PubMed-6712597; Schwabe C., Anastasi A., Crow H., McDonald J.K., Barrett A.J.; "Cystatin. Amino acid sequence and possible secondary structure."; Biochem. J. 217:813-817(1984).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cystatin, a protein inhibitor of cysteine proteinases. Improved
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           purification from egg white, characterization, and detection in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Turk V., Brzin J., Longer M., Ritonja A., Bropkin M., Borchart
Machleidt W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               laber B., Krieglstein K., Henschen A., Kos J., Turk V., Huber
75 KPET--TNC-VPQERELHKQVNCFFSVFAVPWFEQYKILNKSCSS 116
                 The cysteine proteinase inhibitor chicken cystatin is a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of cystatin from chicken egg white.";
Hoppe-Seyler's Z. Physiol. Chem. 364:1487-1496(1983)
                                                                                                                                              21-JUL-1986 (Rel. 01, Created)
01-OCT-1989 (Rel. 12, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
                                                                                                                139 AA.
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MEDLINE=89052676; PubMed=3191914;
                                                                                                                                                                                                                                                                                                   [1]
SEQUENCE FROM N.A.
MEDLINE=90008873; PubMed=2793849;
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                                                                                                                STANDARD;
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SEQUENCE OF 24-139.
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                                                                                                                                                                                                                                                                                  NCBI_TaxID=9031;
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                                                                                                                CHICK
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                                                                               KESULT 8
CYT_CHICK
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STRUCTURE BY NMR

74 81

Gaps

3,

Best Local Similarity 33.3%; Matches 35; Conservative 2

15 EVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQ

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CYTC_RABIT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its mose by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
Chapman J.C., Clamp M., Clark G., Clark L.N., Clark S.Y., Clee C.M., Clegg S., Cobley V.E., Collier R.E., Connor R.E., Corby N.R., Coulson A., Coville G.J., Deadman R., Dann M., Coville G.J., Fraser A., French L., Garner P., Grafham D.V., Griffiths C., Griffiths M.N.D., Gwilliam R., Hall R.E., Hand D.V., Griffiths C., Griffiths M.N.D., Gwilliam R., Hall R.E., A Hamond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J., A Huckle E., Hunt A.R., Hunt S.E., Jekosch K., Johnson C.M., Johnson D., Kay M.P., Kimberley A.M., King A., Knights A., Laird G.K., Lawlor S., Lehvaeslaiho M.H., Leversha M.A., Lloyd C., Lloyd D.M., Lovell J.D., Marsh V.L., Marthy D., McConnachte L.J., McLiay K., McMurray A.A., Milne S.A., Mistry D., Moore M.J.F., Mullikin J.C., Nickerson T., A Pirker B.J.C., Farthalingam S.R., Plumb R.W., Ramsay H., Struce C.D., Smith M.L., Soderlund C., Steward C.A., Sulston J.E., Swann R.M., Sycamore N., Taylor R., Thomas D.W., Thorpe A., Tracey A., Tromans A.C., Vaudin M., Walli M., Walliams L., Williams S.A., Whitchead S.L., Whitteker P., Willey D.L., Williams L., Williams S.A., Wilming L., Wray P.W., Hubbard T., Durbin R.M., Bentley D.R., Beck S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TISSUE SPECIFICITY: Proximal caput region of the epididymis. Lower expression in the testis. Within the testis it is localized to the elongating spermatids, whereas within the epididymis it is exclusively synthesized by the proximal caput epithelium. SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -1- FUNCTION: Performs a specialized role during sperm development and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CYSTATIN-RELATED EPIDIDYMAL SPERMATOGENIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rogers J.; "The DNA sequence and comparative analysis of human chromosome 20.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SECONDARY AREA OF CONTACT (POTENTIAL)
BY SIMILARITY.
BY SIMILARITY.
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N-LINKED (GLCNAC. . ) (POTENTIAL)
A - P (in dbSNP:1054633)
/FIId=VAR_014527.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29.5%; Score 188.5; DB 1; Length 142; 40.4%; Pred. No. 2.1e-12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HSSP; P01034; 1G96.
Genew; HGNC:2480; CST8.
GO:0004869; P:cysteine protease inhibitor activity; TAS.
InterPro; IPR000010; Cystatin.
Pfam; PF00031; cystatin; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30; Indels
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Tholy protease inhibitor; Signal; Polymorphism. SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; AF059244; AAC14707.1; -. EMBL; AL109954; CAB64234.1; -.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nature 414:865-871 (2001).
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119
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Large scale isolation of osteoclast-specific genes by an improved method involving the preparation of a subtracted cDNA library."; Genes Cells 3:459-475(1998).
-!- FUNCTION: This is a thiol proteinase inhibitor.
-!- SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                Oryctolagus cuniculus (Rabbit).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Kobori M., Ikeda Y., Nara H., Kato M., Kumegawa M., Nojima H., Kawashima H.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 148;
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REACTIVE SITE.
SECONDARY AREA OF CONTACT.
BY SIMILARITY.
BY SIMILARITY.
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30.8%; Pred. No. 5.8e-11;
                                                                                                                             16-OCT-2001 (Rel. 40, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
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01-APR-1990 (Rel. 14, Last sequence update)
08-EFB-2003 (Rel. 41, Last annotation update)
Cystatin C precursor (Fragment).
148 AA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN=Japanese white, TISSUE=Bone, MEDLINE=98424349; PubMed=9753427;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; AB009342; BAA75921.1; -. HSSP; P01034; 1G96.
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Pfam; PF00031; Cystatin; 1.
SMART; SM00043; CY; 1.
PROSITE; PS00287; CYSTATIN; FA
                                                                                   16-OCT-2001 (Rel. 40, Created)
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Best Local Similarity 30.00,
Best Local 33; Conservative
STANDARD;
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39
87
                                                                                                                                                                                                                 Cystatin C precursor.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=9986;
RABIT
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82 VPQER-ELHKQVNCFFSVFAVPWFEQYKILNKSC 114

24 KDSLQWITDQYNKESDDKYHPRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPETTN--C

81

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                   Biochem. J. 340:85-93(1999).
-!- FUNCTION: Performs a specialized role during sperm development and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CYSTATIN-RELATED EPIDIDYMAL SPERMATOGENIC PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12 SVHEVMAVENYAKDSLQ-----WIT-DQYNKESDDKYHFRIFRVLKVQRQVTDHLEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | : || | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | : | | : | : | | : | : | | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Cystatin-related epididymal spermatogenic protein precursor (Cystatin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       63 HINVEMONTICOXP -- ETINCVPOER - ELHKOVNCFFSVFAVPWFEQYKILNKSC 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SECONDARY AREA OF CONTACT (POTENTIAL).
BY SIMILARITY.
BY SIMILARITY.
N-LINKED (GLCNAC. . .) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=21638749; PubMed=11780052; Deloukas P., Matthews L.H., Ashurst J., Burton J., Gilbert J.G.R., Jones M., Stavrides G., Almeida J.P., Babage A.K., Bagguley C.L., Bailey J., Barlow K.F., Bates K.N., Beard L.M., Beare D.M., Beasley O.P., Bird.C.P., Blakey S.E., Bridgeman A.M., Brown A.J., Buck D., Burrill W.D., Butler A.P., Carder C., Carter N.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cornwall G.A., Hann S.R.;
"Transient appearance of CRES protein during spermatogenesis and caput epididymal sperm mitration.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31.1%; Score 199; DB 1; Length 142; 35.7%; Pred. No. 1.8e-13; ive 26; Mismatches 36; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16246 MW; FB873FAA6B6CAB34 CRC64;
                                                                                                      -!- SUBCELLULAR LOCATION: Secreted (By similarity).
cystatin-related epididymal spermatogenic gene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30-MAY-2000 (Rel. 39, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   142 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
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MEDLINE=95344753; PubMed=7619504;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
Thiol protease inhibitor; Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Reprod. Dev. 41:37-46(1995)
                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; AF090692; AAC36317.1; -. HSSP; P01034; 1G96.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     060676;
30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  nterPro; IPR000010; Cystatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       41; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               81
105
139
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           142 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
Matches 41; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=9606;
                                                                                     maturation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CST8 OR CRES.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 5
CST8_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SITE
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                                                                                                                                                                                                                                                                This SWISS-FROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          83
                                          TISSUE SPECIFICITY: Proximal caput region of the epididymis. Lower expression in the testis. Within the testis it is localized to the elongating spermatids, whereas within the epididymis it is exclusively synthesized by the proximal caput epithelium. INDUCTION: Testicular factors or hormones other than androgens present in the testicular fluid may be involved in the regulation of CRES gene expression.

SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     POTENTIAL.
CYSTATIN-RELATED EPIDIDYMAL SPERMATOGENIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SVHEVMAVENY------AKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          25 SKNEVKA-QNYFGSINISNANVKQCVWFAMKEYNKESEDKYVFLVDKILHAKLQITDRME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
Cystatin-related epididymal spermatogenic protein precursor (Cystatin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                62 YHLNVEMQWTTCQKP--ETTNCVPQER-ELHKQVNCFFSVFAVPWFEQYKILNKSC 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REF. 2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
STRAIN-Sprague-Dawley; TISSUE-Epididymis;
MEDLINE-99247899; PubMed=10229662;
Corrwall G.A., Haia N., Sutton H.G.;
"Structure, alternative splicing and chromosomal localization of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SECONDARY AREA OF CONTACT (POTENTIAL) BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BY SIMILARITY.
N-LINKED (GLCNAC. . .) (POTENTIAL)
N-LINKED (GLCNAC. . .) (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30; Indels 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JWLSLILFIIP -> GTRDEQVGESQK (IN
50B446E98F66673E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 142;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 214; DB 1;
Pred. No. 5.1e-15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                142 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PLWLSLILFIIP
-!- SUBCELLULAR LOCATION: Secreted.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SMART; SM00043; CY; 1.
Thiol protease inhibitor; Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; AF091503; AAC61754.1; -. EMBL; AF090691; AAC36316.1; -. EMBL; S49926; AAC35390.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MGD; MGI:107161; Cst8.
InterPro; IPR000010; Cystatin.
Pfam; PF00031; cystatin; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15 Pi
16288 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             33.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    43; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     81
105
139
39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PIR; A45361; A45361.
HSSP; P01034; 1G96.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    142 AA;
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Best Local Similarity
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95
1119
39
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CSTB RAT
DD -88956;
DT 30-MAY-200
DT 10-OCT-200
DE Cystatin-r
DE 8);
GN CSTB OR CR
OS Rattus nor
OC Mammalia;
OX NCBI_TAXIC
RN [1]
RP SEQUENCE F
RC STRAIN-SPI
RX MEDLINE-SPI
RX MEDLINE-SPI
RA CORNWALLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12
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CHAIN SITE

tches

요 ò

4 62

12; Gaps

84

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SEQUENCE OF 4-142 FROM N.A.
Nature 409:685-690(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity 54.9 es 62; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STANDARD;
                                                                                                                                                                                                                                                                                                                      80
102
135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOUSE
                                                                                                                                                                                                                                                                                                                                       DISULFID
                                                                                                                                                                                                                                                                                                                                                      DISULFID
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                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
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                                                                                                                                                                                                                                                                                             SIGNAL
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Matches
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   8
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SECURATE FORM N. N. STREE-Epididymis;

X KRAIN-CSTRL/63; TISSUE-Epididymis;

X KRAIN-CSTRL/63; TISSUE-Epididymis;

A RAWAI J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,

A Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,

A Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,

Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,

Radota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,

Pleischmann W., Gasaterland T., Gissi C., King B., Kochiwa H.,

Kadota K., Matsuda H.A., Staubi R., Tomita M., Wagner L., Washio T.,

Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,

Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,

Brownstein M.J., Bult C., Pletcher C., Fuljita M., Gariboldi M.,

Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,

Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,

Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,

Suzuki H., Toyo-oka K., Wang K.H., Weitz C., Whittaker C., Wilming L.,

Mynabha-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
                                                                                                                                                                                                                                                                                                                                                                                                               1 LPYQARKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHL 60
                                                                                                                                                                                                                                                                                                                                                                                                                                21 LPYQARKKIFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHL 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BYHLNVEMOWITCOKPETINCVPQERELHKQVNCFFSVFAVPWFEQYKILNKSCSSD 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                   CYSTATIN 11.
SECONDARY AREA OF CONTACT (POTENTIAL)
BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Functional annotation of a full-length mouse cDNA collection.";
                                                                                                                                                                                                                                                                            N-LINKED (GLCNAC. .) (POTENTIAL)
Missing (in isoform 2).
/FTId=VSP_001260.
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                                                                                                                                                                                                                                                                                                                                                      Length 137;
                                                                                                                                                                                                                                                                                                                                                                                  0; Indels
                                                                                                    HSSP; POLO38; JANZY.
Genew, HGNC:15959; CSTII.
InterPro; IPR000010; Cystatin.
Pfam; PF00031; Cystatin; 1.
SMART; SMO043; CY; 1.
PROSITE; PRO280; CYSTATIN; FALSE NEG.
Thiol protease inhibitor; Signal; Alternative splicing.
                                                                                                                                                                                                                                                                                                                        C585C8C39A585C3B CRC64;
                                                                                                                                                                                                                                                                                                                                                     100.0%; Score 640; DB 1; 100.0%; Pred. No. 1.6e-58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (Rel. 41, Created)
(Rel. 41, Last sequence update)
(Rel. 42, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                  0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                       EMBL; AL096677; CAC13170.1; -. EMBL; AL096677; CAC17423.1; -.
                                                                                                                                                                                                                                                                                                                           137 AA; 16375 MW;
                                                                                                                                                                                                                                                                                                                                                                   100.08;
                                                                                                                                                                                                                                                                                                                                                                                  Matches 117; Conservative
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134
131
110
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                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=10090
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75
93
114
131
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10-OCT-2003
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09D269;
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                                                                                                                                                                                                                                                  DISULFID
                                                                                                                                                                                                                                                                                                                          SEQUENCE
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                                                                                                                                                                                                                                                                               CARBOHYD
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                                                                                                                                                                                                                                                                                                                                                      Query Match
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CS11 MOUSE
ID 0926 M
AC 09026 M
AC 28-FEB-
DT 10-0CTB
DE CYSELTI
GN CSTILL
GN CSTRAIN
RX MEDLIN
RX SAITO
RA SIEGE
RA RICHAL
RA SAITO
RA SARA
RA SAITO
RA SARA
RA GUSTIR
RA NOTOS
RA SASA
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RA SASA
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation — the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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"The CRES gene: a unique testis-regulated gene related to the cystatin family is highly restricted in its expression to the proximal region of the mouse epididymis.";
Mol. Endocrinol. 6:1653-1664(1992).
-I- FUNCTION: Performs a specialized role during sperm development and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      P32766; 089102;
01-0CT-1993 (Rel. 27, Created)
30-MXY-2000 (Rel. 39, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Cystatin-related epididymal spermatogenic protein precursor (Cystatin-related epididymal specific protein) (Cystatin 8).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3 YQARKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     24 YQVKRKTFIRIBEVSALESSVKETLEYVTDEYNKKSEDLYNFRILRILKIMKQVTGHLEY
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STRAIN=CAH, and CD-1;
MEDLINE=99247899; bubwed=10228662;
Cornwall G.A., Hsia N., Sutton H.G.;
"Structure, alternative splicing and chromosomal localization of the cystatin-related epididymal spermatogenic gene.";
Biochem. J. 340:85-93(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        POTENTIAL.
CYSTATIN 11.
SECONDARY AREA OF CONTACT (POTENTIAL).
BY SIMILARITY.
BY SIMILARITY.
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Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       58.1%; Score 372; DB 1; Length 139; 54.9%; Pred. No. 3.7e-31; ive 29; Mismatches 22; Indel8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          134 N-LINKED (GLCNAC. . .) (PC
16217 MW; F228D9815FA32640 CRC64;
-!- SUBCELLULAR LOCATION: Secreted (Potential).
-!- SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 142 AA
                                                                                                                                                                                                                                                                                                                                                             EMBL; AK020300; BAB32061.1; -.
HSSP; P01034; 1G96.
MGD; MGI:1925490; Cgt11.
InterPro; IPR000010; Cystatin.
Pfam; PF00031; Cystatin; 1.
SMART; SM00043; Cy; 1.
PROSITE; PS00287; CysTyTIN; FALSE NEG.
Thiol protease inhibitor; Signal.
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MEDLINE=93078799; PubMed=1280328;
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GenCore version 5.1.6
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OM protein - protein search, using sw model

March 18, 2004, 14:02:50 ; Search time 13.9286 Seconds (without alignments) 437.389 Million cell updates/sec Run on:

US-09-941-314-4 640 1 LPYQARKKTFLSVHEVMAVE.....VFAVPWFEQYKILNKSCSSD 117 Title: Perfect score: Sequence:

Scoring table:

141681 segs, 52070155 residues BLOSUM62 Gapop 10.0 , Gapext 0.5 Searched:

141681 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

SwissProt_42:* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

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	Description	Q9h112 homo sapien		P32766 mus musculu	088969 rattus norv		097862 oryctolagus		-	P81061 coturnix co	P21460 mus musculu	P09228 homo sapien		homo	homod	O19092 macaca mula	P01035 bos taurus	P01036 homo sapien		homo	рошо	homo		P08935 bitis ariet	Q91195 oncorhynchu	Oszohe mus musculu	Q98967 oncorhynchu	Q15828 homo sapien	076096 homo sapien	P01047 bos taurus	P01045 bos taurus	O89098 mus musculu	P01046 bos taurus	P01044 bos taurus
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SUMMARIES	ID	CS11 HUMAN	CS11_MOUSE	CST8_MOUSE	CST8_RAT	CST8_HUMAN	CYTC_RABIT	CYTC_RAT	CYT_CHICK	CYT_COTJA	CYTC MOUSE	CYIT HUMAN	CYTC_SAISC	CSTL_HUMAN	CYTC_HUMAN	CYTC_MACMU	CYTC_BOVIN	CYTS HUMAN	CYT CYPCA	CYTN HUMAN	CST9_HUMAN	CYTD_HUMAN	CYTS_RAT	CYT_BITAR	CYT_ONCMY	CST9 MOUSE	CYT_ONCKE	CYTM HUMAN	CYTF HUMAN	KNL2 BOVIN	KNH2 BOVIN	CYTF_MOUSE		KNH1_BOVIN
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de	Query Match	100.0	58.1	33.4	31.1	29.2	27.3	26.8	26.6	26.5	25.1	25.1	25.0	24.6	24.2	24.2	24.0	22.9	22.3	21.8	21.1			٠. م	6	19.8	Ġ.	19.0	17.0	15.4	15.4	15.3	15.1	15.1
	Score	640	372	214	•		174.5	171.5	170.5	169.5	160.5	160.5	160	157.5	155	155	153.5	146.5	143	139.5	135	130.5	129.5	127	127	127	126	121.5	109	98.5	98.5	98	96.5	96.5
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	P08934 rattus norv									
CYTX ONCVO	KNG_RAT	SYE_VIBPA	KNT2 RAT	KNT1 RAT	KNG MOUSE	CAPA KLULA	MESJ_HAEIN	SYE VIBVY	BGIB HUMAN	exg_canal
62 1	639 1	174 1	130 1	130 1	191	14 1	130 1	174 1	100	138 1
14.9	87 13.6 6	12.9	12.7	12.3	12.3	12.0	12.0	11.8	11.7	11.5
34	36	37	38	39	40	41	42	43	44	4.5

ALIGNMENTS

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RESULT 15
J04918
Cystatin precursor - chum salmon
C;Species: Oncorhynchus keta (chum salmon)
C;Species: Oncorhynchus keta (chum salmon)
C;Date: 26-Sep-1996 #sequence_revision 01-Nov-1996 #text_change 21-Jan-2000
C;Accesaion: J04918
R;Yamashita, M.; Konagaya, S.
J; Biochem. 120, 483-487, 1996
A;Title: Molecular cloning and gene expression of chum salmon cystatin.
A;Reference number: J04918
A;Accession: J04918
A;Accession: J04918
A;Accession: J04918
A;Accession: J04918
A;Accession: J04918
A;Residues: 1-132 <YAM>
A;Residues: 1-132 <YAM>
A;Residues: 1-132 <YAM>
A;Cross-references: DBBJ:DB86628
A;Experimental source: liver
C;Comment: This protein is a homolog of mammalian cystatin C, and acts as an extracellul C;Reywords: liver
C;Cupain: signal sequence #status predicted <SIG>F;23-132/Domain: signal sequence #status predicted <SIG>F;23-132/Domain: cystatin homology <CYS>
                                                                    3,
                                                                                                                                24 KDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK----- 75
                                                                                                                                                                    16 QEAAAFAVEKYNAGSKNDYYFKERRVVEAQSQVVSGVKYYLAMMELLKTTCKKTVGRPKGY 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            38 RDALQFAVVEHNKKTINDMFVRQVAKVVNAQKQVVSGMKYIFTVQMGRIPCRKGGVEKICS 97
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                                                                        Gaps
Query Match 19.8%; Score 127; DB 2; Length 111; Best Local Similarity 30.3%; Pred. No. 1.2e-05; Matches 27; Conservative 24; Mismatches 28; Indels 10;
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19.7%; Score 126; DB 2; Length 132;
Best Local Similarity 26.3%; Pred. No. 1.8e-05;
Matches 25; Conservative 27; Mismatches 41; Indels
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Search completed: March 18, 2004, 14:23:12 Job time: 22.5179 secs

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cystatin - puff adder
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cystatin D precursor - human
Cispecies: Homo sapiens (man)
Cjate: 03-May-1994 #sequence_revision 03-May-1994 #text_change 16-Jul-1999
CjAccession: A47142; 818212
Rifreije, J.P.; Balbin, M.; Abrahamson, M.; Velasco, G.; Dalboge, H.; Grubb, A.; Lopez-C
J. Biol. Chem. 268, 15737-15744, 1993
A;Title: Human cystatin D. cDNA cloning, characterization of the Escherichia coli expres
A;Reference number: A47142; MUID:93340179; PMID:8340398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: mRNA
A; Residues: 1-142 < FRE>
A; Residues: 1-142 < FRE>
A; Cross-references: GB:X70377; NID:g398710; PIDN:CAA49838 1; PID:g398711
A; Notes: single residue difference between this report and S18218 was investigated and sh
R; Freije, J.P.; Abrahamson, M.; Olafsson, I.; Velasco, G.; Grubb, A.; Lopez-Otin, C.
B; Biol. Chem. 266, 20538-20543, 1991
A; Title: Structure and expression of the gene encoding cystatin D, a novel human cystein
A; Reference number: S18212; MUID:92041895; PMID:1939105
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The intracellular role of this protein is the inhibition of intralysosomal
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                                                                                                                                                                                                                                                                                                                                            cystatin S precursor - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 17-Jul-1992 #sequence_revision 17-Jul-1992 #text_change 16-Jul-1999
                                                                                                                                                                                                                                                                                                         24 KDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK--PETTNC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C'Superfamily: cystatin; cystatin homology
Keywords: cystatin proteinase inhibitor; extracellular protein; saliva
F;1-20/Domain: signal sequence #status predicted <SIG>
F;30-142/Domain: cystatin homology <CYS>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Residues: 1-45,'C',47-142 <FR2>
A;Cross-references: EMBL:X59964; NID:g30263; PIDN:CAA42590.1; PID:g30264
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5
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                                                                                                                                                                                          20.9%; Score 134; DB 1; Length 111; 27.4%; Pred. No. 2.4e-06; ive 27; Mismatches 40; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                        VPQERELHKQVNCFFSVFAVPWFEQYKILNKSCSS 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                     C; Superfamily: cystatin; cystatin homology
C; Keywords: cysteine proteinase inhibitor
F;2-11/Domain: cystatin homology <CYS>
F;84-52/Region: inhibitory
F;89-109/Disulfide bonds: #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A,Gene: GDB:CSTS
A,Cross-references: GDB:136380; OMIM:123858
A,Map position: 20p11.21-20p11.21
A,Introns: 77/3; 115/3
                                                                                                                                                                                                                                                       26; Conservative
                                                                                                                                                                                                                    Best Local Similarity
Matches 26; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Accession: A47142
A; Status: preliminary
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                                                                                                                                                                                                                                                                                                                                                                                                                     82
                                                                                                                                                                                                Query Match
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JQ1470
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C;Accession: JQ1470; A31891; S05252; S15132
R;Cox, J.L.; Shaw, P.A.
Rene 110, 175-180, 1992
A;Title: Structure, organization and regulation of a rat cysteine proteinase inhibitor-er
A;Reference number: JQ1470; MUID:92165056; PMID:1537554
                                                                                                                                                                                                                                                                                                                                 Ajaccession: JQ1470
Ajmolecule type: DNA
Ajresidues: 1-141 <COX
Ajre
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;Mosidues :28-131, QE',116-141 <BED>
;Mote: 87-Glu and 88-His were also found; disulfide bonds determined ;Mishiura, T.; Ishibashi, K.; Abe, K. ;Mothiura, T.; Ishibashi, K.; Abe, K. 1991 
;Atherence forms of crystatin from submandibular saliva of isoproterenol; Reference number: S15132; MUID:91230145; PMID:1903068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Molecule type: protein
;Residues: 29-38;76-80 <BIO>
;Note: forms RSC-1, RSC-2 and RSC-3 with differing amino-terminals were found; a form be
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Blochem. J. 246, 799-802, 1987
A.Title: Amino acid Sequence of a cystatin from venom of the African puff adder (Bitis an A;Reference number: A28793; MUID:88076861; PMID:3500714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rch. Biochem. Biophys. 273, 245-253, 1989
Title: Amino acid sequence of an inducible cysteine proteinase inhibitor (cystatin);
Reference number: 805252; MUID:89334379; PMID:2757396;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       m
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C;Date: 15-Dec-1988 #sequence_revision 15-Dec-1988 #text_change 30-Sep-1993
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C;Superfamily: cystatin; cystatin homology
C;Superfamily: cystatin; cystatin homology
C;Keywords: cystatin; sequence #status predicted <SIG>F;1-28/Domain: signal sequence #status predicted <MAT>F;28-141/Product: cystatin S, form RSC-3 #status predicted <MAT3>F;30-141/Domain: cystatin homology <CYS-7:30-141/Product: cystatin S, form RSC-2 #status predicted <MAT2>F;31-141/Product: cystatin S, form RSC-1 #status predicted <MAT1>F;32-141/Product: cystatin S, form RSC-1 #status predicted <MAT1>F;32-141/Product: cystatin S, form RSC-1 #status predicted <MAT1>F;94-104,118-138/Disulfide bonds: #status experimental
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ;Molecule type: mRNA
;Residues: 'ISTDYLYISFEHETLSC',27-141 <SHA>
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A,Molecule type: protein
A,Residues: 1-111 <RIT>
C,Superfamily: cystatin; cystatin homology
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A;Cross-references: GB:J03870; NID:g337751; PIDN:AAA60299.1; PID:g337752
R;Saltoh, E.; Isemura, S.; Sanada, K.; Kim, H.S.; Smithies, O.; Maeda, N.
Biol. Chem. Hoppe-Seyler 369, 191-197, 1988
A;Title: Cystatin superfamily. Evidence that family II cystatin genes are evolutionarily A;Reference number: S02489; MUID:89076505; PMID:3202964
A;Accession: S02489
                                                                                                                                                                                                                                              A;Status: not compared with conceptual translation
A;Molecule type: DNA
A;Residues: 21-141 <SA2>
R;Saitoh, B.; Kim, H.S.; Smithies, O.; Maeda, N.
Gene 61, 329-338, 1987
A;Title: Human cysteine-proteinase inhibitors: nucleotide sequence analysis of three mem?
A;Reference number: A91589; MUID:88185836; PMID:3446578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Molecule type: DNA
A;Residues: 1-86, I',88-141 <SAI>
A;Residues: 0.5 Saitoh, E.; Sanada, K.
Fise Lett. 198, 145-149, 1986
A;Title: Characterization of a new cysteine proteinase inhibitor of human saliva, cystat
A;Reference number: A01273; MUID:86164938; PMID:3514272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Molecule type: protein
Kaesidues 21-55 cRAM.
C;Comment: Human saliva appears to contain several cysteine proteinase inhibitors that an
ences. Cystatin SN, with a pI of 7.5, is a much better inhibitor of papain and dipeptidy]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Molecule type: protein
A;Residues: 29-141 <ISE>
R;Ramasubbu, N.; Reddy, M.S.; Bergey, E.J.; Haraszthy, G.G.; Soni, S.D.; Levine, M.J.
Biochem. J. 280, 341-352, 1991
A;Title: Large-scale purification and characterization of the major phosphoproteins and
A;Reference number: S19279; MUID:92082469; PMID:1747107
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A;Residues: 1-111 <KOI>
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A; Residues: 21-51 cHAW
A; Residues: 21-51 cHAW
B; Ramasubbu, N.; Reddy, M.S.; Bergey, E.J.; Haraszthy, G.G.; Soni, S.D.; Levine, M.J.
B; Ramasubbu, N.; Reddy, M.S.; Bergey, E.J.; Haraszthy, G.G.; Soni, S.D.; Levine, M.J.
B; A; Title: Large-scale purification and characterization of the major phosphoproteins and A; Reference number: S19279; MUID:92082469; PMID:1747107
A; Accession: S19280
A; Status: preliminary
A; Status: protein
A; Residues: 21-55 cRAW
B; Johnsson, M.; Richardson, C.F.; Bergey, E.J.; Levine, M.J.; Nancollas, G.H.
A; Reidues: 21-55 cRAW
A; Title: The effects of human salivary cystatins and statherin on hydroxyapatite crystal
A; Reference number: A56608; MUID:92074898; PMID:1741693
A; Accession: A01272
A; Molecule type: protein
A; Residues: 29-134, 'D', 136-141 <ISE>
A; Risemura, S.; Saitoh, E.; Ito, S.; Isemura, M.; Sanada, K.
A; Saitoh, E.; Ito, S.; Isemura, M.; Sanada, K.
J. Biochem. 96, 1311-1314, 1984
A; Title: Cystatin S: a cysteine proteinase inhibitor of human saliva.
A; Reference number: A91941, MUID:8104877; PMID:6394600
A; Reference number: A191941, MUID:8104877; PMID:6394600
A; Ridwke, D.H.; Yuan, P.M.; Wilson, K.J.; Hunkapiller, M.W.
Biochem. Biophys. Res. Commun. 145, 1248-1253, 1987
A; Ritle: Identification of a long form of cystatin from human saliva by rapid microbore A; Reference number: A29603; MUID:87270697; PMID:3496880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Note: sequence extracted from NCBI backbone (NCBIP:67866)
A;Note: authors desigate form without phosphate as cystatin S and form containing one ph C;Comment: This protein strongly inhibits papain and ficin, partially inhibits stem brom
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Cystatin SN precursor [validated] - human
NiAltermate names: cystatin SA-I
Cystatin SN precursor [validated] - human
NiAltermate names: cystatin SA-I
Cystofies: Homo sapiens (man)
No. Biol. Champer SO 3981-9387, 1988
A;Title: Purification, molecular cloning, and sequencing of salivary cystatin SA-I.
A;Reference number: A28110; MUID:88243825; PMID:2837486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ñ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20 ENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK--PE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C; Superfamily: cystatin, cystatin homology
C; Keywords: cysteine proteinase inhibitor; phosphoprotein; saliva
F;1-20/Domain: signal sequence #status predicted <SIG>
F;21-41/Product: cystatin S #status predicted <MAT>
F;30-441/Domain: cystatin homology <CYS>
F;76-80/Region: inhibitory #status predicted
F;94-104,118-138/Disulfide bonds: #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              101 LDTCAFHEQPELQKKQLCSFEIYEVPWEDRMSLVNSRC 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TINCVPQER-ELHKQVNCFFSVFAVPWFEQYKILNKSC 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Map position: 20p11.2-20p11.2
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A,Cross-references: GDB:136381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: protein A; Residues: 21-36 <JOH>
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A;Residues: 1-141 <ALH>
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Best Local S:
Matches 29,
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UDHUP2
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R;Hirado, M.; Tsunasawa, S.; Sakiyama, F.; Niinobe, M.; Fujii, S.
FBBS Lett. 186, 41-45, 1985
A;Title: Complete amino acid sequence of bovine colostrum low-M-r cysteine proteinase in
A;Reference number: A01271; MUID:85231205; PMID:3891407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NyAlternate promise cystatin SA-III; salivary acidic protein-1
CiSpecies: Homo sapiens (man)
CiSpecies: Homo sapiens (man)
CiSpecies: Homo sapiens (man)
CiDate: 25-Feb-1995 #sequence revision 08-Feb-1996 #text change 16-Jul-1999
CiAccession: 817667; 816500; A01272; A29603; 819280; A56608
R;Bobek, L.A.; Aguirre, A.; Levine, M.J.
R;Bobek, L.A.; Aguirre, A.; Levine, M.J.
A;Title: Human salivary cystatin S. Cloning, sequence analysis, hybridization in situ anc A;Reference number: 817667; MUID:91378918; PMID:1898352
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A;Molecule type: protein
A;Residues: 21-134, D',136-141 <IHU>
R;Residues: 21-134, D',136-141 <IHU>
R;Issemura, S.; Saitoh, E.; Sanada, K.
J. Biochem. 96, 489-498, 1984
A;Title: Isolation and amino acid sequence of SP-1, an acidic protein of human whole sall A;Reference number: A91985; MUID:85054716; PMID:6501254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Title: Salivary cystatin SA-III, a potential precursor of the acquired enamel pellicle, A; Reference number: S16500; MUID:91378515; PMID:1898055
                                                                                                                                                                                                                                                            46 EEGVRRALDFAVGEYNKASNDMYHSRALQVVRARKQIVAGVNYFLDVELGRTTCTKTQPN 105
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,Residues: 1-141 <8089-
,Cross-references: EMBL:X54667; NID:g30365; PIDN:CAA38478.1; PID:g30366
,Lamkin, M.S.; Jensen, J.L.; Setayesh, M.R.; Troxler, R.F.; Oppenheim, F.G.
,rch. Biochem. Biophys. 288, 664-670, 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N'Alternate names: thiol proteinase inhibitor
C;Species: Bos primigenius taurus (cattle)
C;Date: 28-Feb-1986 #sequence_revision 28-Feb-1986 #text_change 06-Dec-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13 EBGVQEALSFAVSEFNKRSNDAYQSRVVRVVRARKQVVSGMYYFLDVELGRTTCTKSQAN
                                                                                                                                                                                              20 ENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK--PE
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Length 146;
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                                                                                                                                                                                                                                                                                                                                                                                                  78 TINC-VPQERELHKOVNCFFSVFAVPWFEOYKILNKSCSSD 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     106 LDNCPFHDQPHLKRKAFCSFQIYAVPW-QGTMTLSKSTCQD 145
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      80 --NC-VPQERELHKQVNCFFSVFAVPWFEQYKILNKSC 114
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Best Local Similarity 30.6%; Pred. No. 2.8e-08;
Matches 30; Conservative 23; Mismatches 42;
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A, Residues: 1-112 <4118.
C, Superfamily: cystatin, cystatin homology
C, Keywords: colostrum, cysteine proteinase inhibitor
F;2-112/Domain: cystatin homology <675.
F;48-52/Region: inhibitory #status predicted
F;66-76,90-110/Disulfide bonds: #status predicted
24.2%; Score 155; DB 1;
llarity 33.7%; Pred. No. 2.7e-08;
Conservative 21; Mismatches 42
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                                                   Best Local Similarity
Matches 34; Conserv
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          Query Match
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A,Romes. 2011.2-20p11.2
A,Map position: 20p1.2-20p11.2
A,Introno. 20p1.2-20p11.2
B,12-20pomain. 30pal sequence #status predicted <SIG>P;27-146/Pomain. 20p1.2 #status experimental <MAT>P;28-146/Pomain. cystatin homology <CYS>P;28-146/Pomain. inhibitory #status predicted
F;29/Modified site: hydroxyproline (Pro) (partial) #status experimental
F;99-109,123-143/Disulfide bonds: #status experimental
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A;Residues: 27-53 <POP>
A;Residues: 27-54 <POP>
A;Re
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Blochem. J. 302, 411-416, 1994
A.Title: Local pH-dependent conformational changes leading to proteolytic susceptibility
A.Reference number: S55305; MUID:94379969; PMID:8092991
                                                                                                                                                                                                                                                                                                                                                                                                  Molecule type: protein ; Molecule type: protein ; Molecule type: protein ; Molecule type: 31.0(') 92-146 (GHI> ; Residues: 31-33.0(') 93.0') i Longer, M.; Ritonja, A.; Eropkin, M.; Borchart, U.; Machleidt, W. Dppe-Seyler's Z. Physiol. Chem. 364, 1487-1496, 1983 i Tille: Protein inhibitors of cysteine proteinases. III. Amino-acid sequence of cystati Reference number: S01461; MUID:84110059; PMID:6662498
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                                                   A;Molecule type: protein
A;Residues: 27-131, 'S', 133-146 <GRU>
R;Ghiso, 'J.; Jensson, O.; Frangione, B.
Proc. Natl. Acad. Sci. U.S.A. 83, 2974-2978, 1986
A;Title: Amyloid fibrils in hereditary cerebral hemorrhage with amyloidosis of Iceland A;Reference number: A25434; MUID:86206076; PMID:3517880
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A; Residues: 27-49, 'XX', 52-64 < CLA>
A; Residues: 27-49, 'XX', 52-64 < CLA>
A; Residues: 27-49, 'XX', 52-64 < CLA>
A; Rota this protein, purified from cerebrospinal fluid of patients with the aut
e defective gene is not present in CSF but is found instead in amyloid deposits
R; Popovic, T.; Brzin, J.; Ritonja, A.; Turk, V.
Biol. Chem. Hoppe-Seyler 371, 575-580, 1990
A; Title: Different forms of human cystatin C.
A; Reference number: $10607; MUID: 91025625; PMID: 2222856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;Molecule type: protein;Residues: 27-73 <TUR>
;Residues: 27-73 <TUR>
;Bzzin, J.; Popovic, T.; Turk, V.
iochem. Biophys. Res. Commun. 118, 103-109, 1984
.;Title: Human cystatin, a new protein inhibitor of cysteine proteinases.;Reference number: A32732; MUID:84128015; PMID:6365094
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79

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NiAlternate names: gamma-CSF; gamma-trace; neuroendocrine basic polypeptide; post-gamma; C;Species: Homo sapiens (man)
C;Daccession: Homo sapiens (man)
C;Daccession: S10216; S000004; JL0095; A31400; S02751; A01270; A25434; S12288; A32732; A605: R;Abrahamson, M.; Olafsson, I.; Palsdottir, A.; Ulvsbaeck, M.; Lundwall, A.; Jensson, O.; Biochem J. 268, 287-294, 1990
A;Fitle: Structure and expression of the human cystatin C gene.
A;Reference number: S10216; MUID:90303202; PMID:2363674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Molecule type: DNA
;Residues: 1-146 <LEV>
;Cross.references: GB:X61681; NID:g30367; PIDN:CAA43856.2; PID:g4490944
;Note: the cystatin C gene isolated from the brain of an Icelandic patient with heredit:
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;Title: The human cystatin C gene (CST3) is a member of the cystatin gene family which in Reference number: A33400; MUID:89350949; PMID:2764935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                , Molecule type: DNA
, Molecule type: DNA
, Transidues: 1-24, Tr., 26-146 <SAI>
, CResidues: 1-24, Tr., 26-146 <SAI>
, Ghiso, J.; Cowan, N.; Frangione, B.
, Ghiso, J.; Cowan, N.; Frangione, B.
, Trible: Isolation of a sequence encoding human cystatin C. Conservation of exon-intron tytes a requence encoding human cystatin C. Conservation of exon-intron typesence number: S02751, MUID: 89076571, PMID: 1264504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RjGrubb, A.; Lofberg, H.
Proc. Natl. Acad. Sci. U.S.A. 79, 3024-3027, 1982
A;Title: Human gamma-trace, a basic microprotein: amino acid sequence and presence in the
A;Reference number: A01270; MUID:82222268; PMID:6283552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          shown
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:Levy, E.; Lopez-Otin, C.; Ghiso, J.; Geltner, D.; Frangione, B.
Exp. Med. 169, 1771-1778, 1989
:Pitle: Stroke in Icelandic patients with hereditary amyloid angiopathy is related to ;Reference number: JL0095; MUID:89235594; PMID:2541223
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A;Residues: 1-140 <SOL>
A;Cross-references: EWBL:MS9470; NID:g192911; PIDN:AAA63298.1; PID:g192912
C;Superfamily: cystatin; cystatin homology
F;29-140/Domain: cystatin homology <CYS>
F;29-140/Domain: cystatin homology <CYS>
F;93-103,117-137/Disulfide bonds: #status predicted
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R;Abrahamson, M.; Grubb, A.; Olafsson, I.; Lundwall, A.
R:BSL Lett. 216, 229-233, 1987
A;Title: Molecular cloning and sequence analysis of cDNA coding for the px A;Reference number: S00004; MUID:87219149; PMID:3495457
                                                                                                                                                                                                                                                                                            3;
                                                                                                                                                                                                                        Length 140;
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A;Molecule type: DNA
A;Residues: 82-119 <GH2>
A;Cross-references: EMBL:M27769
A;Note: the authors translated the codon ACC for residue 105
                                                                                                                                                                                                                    Query Match 24.5%; Score 156.5; DB 2; Best Local Similarity 31.4%; Pred. No. 1.8e-08; Matches 33; Conservative 24; Mismatches 45;
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A;Residues: 1-146 <AB1>
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A;Note: the authors translated the codon GAC for residue 129 as Asn
R;Saitoh, E.; Isemura, S.; Sanada, K.; Kim, H.S.; Smithies, O.; Maeda, N.
Biol. Chem. Hoppe-Seyler 369, 191-197, 1988
A;Title: Cystatin superfamily. Evidence that family II cystatin genes are evolutionarily A;Reference number: S02489; MUID:89076505; PMID:3202964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Molecule type: protein
A;Residues: 25-141 <ISE>
R;Isemura, S.; Saitoh, E.; Sanada, K.; Isemura, M.; Ito, S.
In Cysteine Proteinases and Their Inhibitors, Turk, V., ed., pp.497-505, Walter de Gruyt
A;Title: Cystatin S and the related cysteine proteinase inhibitors in human saliva.
A;Reference number: A27015
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Cidacession: A36163
R;Solem, M.; Rawson, C.; Lindburg, K.; Barnes, D.
Biochem, Biophys. Res. Commun. 172, 945-951, 1990
Biochem, Biophys. Res. Commun. 172, 945-951, 1990
A;Title: Transforming growth factor beta regulates cystatin C in serum-free mouse embryd A;Reference number: A36163; MUID:91054522; PMID:2241983
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R;Isemura, S.; Saitch, E.; Sanada, K.
J. Biochem. 102, 693-704, 1987
A;Title: Characterization and amino acid sequence of a new acidic cysteine proteinase A;Reference number: A41422; MUID:88139220; PMID:3436950
                                                                                                                                                                                                                                                                                                                                                                                                          three
                                                                                                                                                                                                                    C.Species: Homo sapiens (man)
C.bate. 31. Mar. 1989 Heaquence revision 30-Jun-1989 #text_change 16-Jul-1999
C.Bacession: B29632; S02499; A1422; B27015
R.Saitch, E.; Kim, H.S.; Smithies, O.; Maeda, N.
Gene 61, 322-338, 1987
A;Tille: Human cysteine-proteinase inhibitors: nucleotide sequence analysis of A;Reference number: A91589; MUID:88185836; PMID:3446578
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   LINCPFHDQPHLMRKALCSFQIYSVPWKGTHTLTKSSCKN 119
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Pred. No. 7.3e-09;
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C;Superfamily: cystatin; cystatin homology
F;30-141/Domain: cystatin homology <CYS>
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cystatin C precursor - mouse
C;Species: Mus musculus (house mouse)
C;Date: 14-Dec-1990 #sequence_revisior
C;Accession: A36163
R;Solem, M.; Rawson, C.; Lindburg, K.;
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A;Residues: 25-134,'D',136-141 <IS2>
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1 Similarity 31.5%;
29; Conservative 2
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Best Local Similarity
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A; Residues: 1-141 <SAI>
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A;Molecule type: mRNA
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Fibber, B.; Krieglstein, K.; Henschen, A.; Kos, J.; Turk, V.; Huber, R.; Bode, W. FBS Lett. 248, 162-169, 1989

Arithe: The cysteine proteinase inhibitor chicken cystatin is a phosphoprotein. A; Reference number: S04008; MuID:89252033; PMID:2721673

A; Reference number: S04008

A; Residues: 97-114 <LAB>
R; Colella, R.; Bird, J.W.C. Gene: 130, 175-181, 1993

A; Title: Isolation and characterization of the chicken cystatin-encoding gene: Mapping to A; Reference number: JN0789; MUID:93366172; PMID:8359684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cross-references: GB:M95725
Note: authors failed to translate the codon for residue 115-Tyr
Comment: This protein binds tightly to and inhibits a variety of cysteine proteinases
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F;32-139/Product: cystatin, short form #status experimental <CYSF>
F;76-80/Region: inhibitory #status predicted
F;76-80/Region: inhibitory #status predicted
F;94-104,118-138/Disulfide bonds: #status experimental
F;103/Binding site: phosphate (Ser) (covalent) (partial) #status experimental
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;Superfamily: cystatin; cystatin homology
;Keywords: cysteine proteinase inhibitor; egg white; phosphoprotein
;Keywords: cysteine proteinase inhibitor; egg white; phosphoprotein
;1-123/Domain: signal sequence #status predicted <SIG>
;24-139/Product: cystatin, long form #status experimental <CYLF>
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A,Molecule type: protein
A,Residues: 1-120 <ESN
A,Note: 43-Asn was also found
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Best Local Similarity
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A,Molecule type: protein
A;Residues: 8-49 <ESN>
R;Esnard, A.; Esnard, F.; Guillou, F.; Gauthier, F.
R;Esnard, A.; Esnard, F.; Guillou, F.; Gauthier, F.
FBS. Lett. 300, 131-135, 1992
A;Title: Production of the cysteine proteinase inhibitor cystatin C by rat Sertoli cells
A;Reference number: S21109
A;Accession: S21109
A;Accession: S21109
A;Accession: S21109
A;Residues: B, XX', 11-20 <ES2>
C;Superfamily: cystatin homology
C;Superfamily: cystatin homology <C;Superfamily: cystatin h
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A; Residues: 24-139 <TUR>
A; Residues: 24-139 <TUR>
B; Anasteasi, A; Brown, M.A.; Kembhavi, A.A.; Nicklin, M.J.H.; Sayers, C.A.; Sunter, D.C. Biochem. J. 211, 129-138, 1983
A; Title: Cystatin, a protein inhibitor of cysteine proteinases. Improved purification francerence number: A7514; MUID: 8325421; PMID: 6409085
A; Contents: annotation; characterization of protein R; Grubb, A.; Lofberg, H.; Barrett, A.J.
FEBS Lett. 170, 370-374, 1984
A; Title: The disulphide bridges of human cystatin C (gamma-trace) and chicken cystatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Contents: annotation; disulfide bonds
R; Aucrswald, E.A.; Naegler, D.K.; Schulze, A.J.; Engh, R.A.; Genenger, G.; Machleidt, W. B; Aucrswald, E.A.; Naegler, D.K.; Schulze, A.J.; Engh, R.A.; Genenger, G.; Machleidt, W. Biochem. 224, 407-415, 1994
A; Title: Production, inhibitory activity, folding and conformational analysis of an N-te A; Reference number: S48159; MUID:95010016; PMID:7925354
A; Accession: S48159
A; Status: preliminary
A; Molecule type: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ajaccession: A01274
Ajaccession: A01274
Ajaccession: protein
Ajacsiques: 24-139 «SCH»
R;Turk, V.; Brzin, J.; Longer, M.; Ritonja, A.; Eropkin, M.; Borchart, U.; Machleidt, W.
R;Turk, V.; Brzin, J.; Longer, M.; Ritonja, A.; Eropkin, M.; Borchart, U.; Machleidt, W.
Apppe-Seyler's Z. Physiol. Chem. 364, 1487-1496, 1983
A;Title: Protein inhibitors of cysteine proteinases. III. Amino-acid sequence of cystati
A;Reference number: S01461; MUID:84110059; PMID:6662498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              nucleotide sequence, and tissue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cystatin precursor - chicken
NAlternate names: cystatin 1, cysteine proteinase inhibitor; egg-white cystatin
C;Species: Gallus gallus (chicken)
C;Species: Gallus gallus (chicken)
C;Date: 03-Aug-1984 #sequence_revision 12-Apr-1996 #text_change 29-Oct-1999
C;Accession: A3456; A01274; S01461; S48159; S04008; JN0789
R;Cololla, R.; Sakaguchi, Y.; Nagase, H.; Bird, J.W.C.
J. Biol. Chem. 264, 17164-17169, 1989
A;Title: Chicken egg white cystatin. Molecular cloning, nucleotide sequence, and A;Reference number: A34456; MUID:90008873; PMID:2793849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      74
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A, Molecule type: mRNA
A, Residues: 1-139 < COL.
A, Cross-references: GB.005077; NID: 9211714; PIDN: AAA48744.1; PID: 9211715
R; Schwabe, C.; Anastasi, A.; Crow, H.; McDonald, J.K.; Barrett, A.J.
Biochem. J. 217, 1984
A; Title: Cyetatin. Amino acid sequence and possible secondary structure.
A; Reference number: A01274; MUID: 84178305; PMID: 6712597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26.8%; Score 171.5; DB 2; Length 127; 33.3%; Pred. No. 5.2e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            75 KPET--TNC-VPQERELHKQVNCPPSVFAVPWPEQYKILNKSCSS 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | : | | | : | | | : | | | : KSQTNLTINCPFHDQPHLMRKALCSFQIYSVPWKGTHTLTKSSCKN 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              43;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         35; Conservative
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Best Local S:
Matches 35
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Gaps

3;

Indels

Length 139;

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C'Species: Rattus sp. (rat)
C'Jobecies: Value sp. (rat)
C'Jobecies: Value sp. (sp. devision 03-Nov-1995 #text_change 16-Jul-1999
C'Jobec 2.2-Nov-1993 #sequence_revision 03-Nov-1995 #text_change 16-Jul-1999
C'Accession: 810587
R'Esnard, F.; Esnard, A.; Faucher, D.; Capony, J.P.; Derancourt, J.; Brillard, M.; Gauth)
R'Esnard, F.; Esnard, A.; Faucher, D.; Capony, J.P.; Derancourt, J.; Brillard, M.; Gauth)
R'Esnard, F.; Esnard, A.; Faucher, B.; Ganthall, C.; Capony, J. Capony, J. Capony, J. Capony, A.; Title: Rat cystain C: the complete amino acid sequence reveals a site for N-glycosylat
A; Reference number: S10587; MUID:90180276; PMID:2400577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Note: the sequence from Fig. 2 is inconsistent with that from Fig. 1 in having 18-Ala C;Superfamily: cystatin; cystatin homology C;Superfamily: cystatin homology <CYS>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              78
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20 ENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPET-
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26.2%; Score 167.5; DB 2; 33.0%; Pred. No. 1.2e-09; iive 24; Mismatches 40;
107 HDEPEMAKYTTCTFVVYSIPWLNQIKLLESKC 138
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GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on:

March 18, 2004, 14:06:15 ; Search time 22.5179 Seconds (without alignments) 499.799 Million cell updates/sec

US-09-941-314-4 Title: Perfect score:

1 LPYQARKKTFLSVHEVMAVE......VFAVPWFEQYKILNKSCSSD 117 Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

Searched:

283366 Total number of hits satisfying chosen parameters:

283366 segs, 96191526 residues

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database

PIR 78:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

ult No. Score	% Query Match	% Query Match Length	DB	SUMMARIES	Description
214	33.4	139	~	A45361	cvstatin-related e
171.5	26.8	127	N	807085	
5	26.6	139	٦	прсн	
ij	26.2	120	~	S10587	cystatin C - rat
160.5	25.1	141	~	B29632	SA
156.5	24.5	140	~	A36163	Ü
155	24.2	146	Ч	UDHOU	U
153.5	24.0	112	Н	UDBO	•
146.5	22.9		Н	UDHUP1	cystatin S precurs
139.5	21.8		Н	UDHUP2	
134	20.9		Н	JC2040	ı
131.5	20.5		~	A47142	cystatin D precurs
129.5	20.2		~	JQ1470	S
127	19.8		~	A28793	1
126	19.7		~	JC4918	ã
2.5	16.0		N	JC4536	
8.5	15.4		-	KGBOL2	
8.5	15.4		ч	KGBOH2	kininogen, HMW II
6.5	15.1		٦	KGBOL1	kininogen, LMW I p
96.5	15.1		ч	KGBOH1	kininogen, HMW I p
5.5	14.9	162	N	A43428	tin - r
3.5	14.6		~	KGHUL1	kininogen, LMW pre
93.5	14.6		Н	KGHUH1	₹
87	13.6		~	A28055	ů,
87	13.6		~	A25486	kininogen, HMW I p
85.5	13.4		~	A23897	major acute phase
81	12.7	430	N	B28055	T-kininogen, LMW I
80	12.5		0	T31871	щ
79	12.3	430	Н	KGRTT1	н

hypothetical prote beta-1,6-N-acetylg	major acute phase membrane protein P	glucan 1,3-beta-gl beta-gluconase [im	CHL1 protein - yea tubulin beta chain	protein H14A12.5 (hypothetical prote	hypothetical prote methionine-tRNA li	methionine tRNA sy methionine tRNA sy	glucan 1,3-beta-gl probable periplasm
D64151 A46297	KGRTM S42613	A47702 T52149	S12499 S14570	D88508 T23004	T23130 SYECMT	C85839 H90993	JN0118 F81278
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430	423 582	438	861 386	132	1779	677	448
12.0	11.7	11.5	11.4	11.2	11.2	11.1	11.0
77	75	73.5	73	71.5	71.5	71	70.5
30	33 33	34 35	36	8 6	40	4 4 2 8	44 45

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related to the cystatin family is
                            C; Species: Mus musculus (house mouse)
C; Species: Mus musculus (house mouse)
C; Date: 10-Jun-1993 #sequence_revision 18-Nov-1994 #text_change 05-Nov-1999
C; Date: 10-Jun-1993 #sequence_revision 18-Nov-1994 #text_change 05-Nov-1999
C; Date: 10-Jun-1999 #sequence_revision 18-Nov-1994 #text_change 05-Nov-1999
C; Date: 10-Jun-1999 #sequence revision: A45361
A; Title: The CRSS gene: a unique testis-regulated gene related to the cystatin f
A; Reference number: A45361, MUD:93078799; PMID:1280328
A; Reference number: A45361, MUD:93078799; PMID:1280328
A; Residues: 1-139 < COR>
A; Residues: 1-139 < COR>
A; Residues: 1-139 < COR>
A; Cross-references (B:84926; NID:9260492; PIDN:AAC35390.1; PID:9260493
A; Note: sequence extracted from NCBI backbone (NCBIP:118813)
C; Superfamily: cystatin; cystatin homology < CYS>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       62 YHLNVEMQWTTCQKP.--ETTNCVPQER-BLHKQVNCFFSVFAVPWFEQYKILNKSC 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30; Indels 14; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 33.4%; Score 214; DB 2; Length 139; Best Local Similarity 37.1%; Pred. No. 3.5e-14; Matches 43; Conservative 29; Mismatches 30; Indels 1
cystatin-related epididymal specific protein - mouse (fragment)
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Cystatin C precursor - rat (fragment)
C;Species: Rattus norvegicus (Norway rat)
C;Species: Rattus norvegicus (Norway rat)
C;Daccies: 01-Dec-1993 #sequence_revision 03-Aug-1995 #text_change 16-Jul-1999
C;Accession: S07085; S01337; S21109
R;Cole, T.; Dickson, P.W.; Esnard, F.; Averill, S.; Risbridger, G.P.; Gauthier, F.; Schre Bur. J. Blochen. 186, 35-42, 1989
A;Title: The cDAR structure and expression analysis of the genes for the cysteine proteir A;Reference number: S07085; MUID:90092122; PMID:2689174

A;Accession: S07085
A;Actession: S07085
A;Status: preliminary
A;Acteule type: mRNA
A;Residues: 1-127 <COL>
A;Cross-references: EMBL:X16957; NID:G56041; PIDN:CAA34831.1; PID:G736290
R;Esnard, A.; Banard, F.; Faucher, D.; Gauthier, F.
FEBS Lett. 236, 475-478, 1988
A;Title: Two rat homologues of human cystatin C.
A;Reference number: S01337; MUID:88313020; PMID:3044831

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TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein

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                                                                                                                                                                                                                                                                                          Query Match

29.5%; Score 189; DB 9; Length 36;
Best Local Similarity 100.0%; Pred. No. 4.1e-14;
Matches 36; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 29.2%; Score 187; DB 9; Length 35; Best Local Similarity 100.0%; Pred. No. 6.7e-14; Matches 35; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein FILE REFERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FASTEEQ for Windows Version 4.0
SEQ ID NO 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 2, Application US/09740638; Patent No. US20020006656A1; Patent No. US2020006656A1; GENERAL INPORMATION:
APPLICANT: HOlloway James L.; TITLE OF INVENTION: Superfamily; FILE REFERENCE: 99-104; CURRENT APPLICATION NUMBER: US/09/740,638; CURRENT APLICATION NUMBER: US/09/740,638; NUMBER OF SEQ ID NOS: 13
SOFTWARE: FastSEQ for Windows Version 3.0; SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                               RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24 KDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTD 58
FILE REFERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
FRIOR APPLICATION NUMBER: 60/230,230
FRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
SERVIN 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; Sequence 8, Application US/09941314; Patent No. US20020142396A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 145
TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                     TYPE: PRT
ORGANISM: Homo sapiens
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TYPE: PRT
ORGANISM: Homo sapiens
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US-09-740-638-2
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Search completed: March 18, 2004, 14:30:52 Job time : 70.8036 secs

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                                                           6 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQ
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Sequence 1.2, Application US/09941314

Batent No. US20020142396A1

GENERAL INFORMATION:

APPLICANT: ZymoGenetics, Inc.

TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to

TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein

FILE REFERENCE: 00-81PC;

CURRENT APPLICATION NUMBER: US/09/941,314

CURRENT FILING DATE: 2001-08-29

PRIOR FILING DATE: 2001-09-01

NUMBER OF SEQ ID NOS: 19

SOFTWARE: PastSEQ for Windows Version 4.0

SEQ ID NO 12

LENGTH: 33
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 189; DB 9; I
Pred. No. 3.7e-14;
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                                                                                                                                                                                                                                                                            Sequence 10, Application US/09941314 Patent No. US20020142396A1
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Best Local Similarity 100.
Matches 33; Conservative
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ORGANISM: Homo sapiens
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ORGANISM: Homo sapiens
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US-09-941-314-12
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APPLICANT: Penn, Sharron G.
APPLICANT: Penn, Sharron G.
APPLICANT: Bank, David R.
APPLICANT: Hanneal, David R.
APPLICANT: Hanneal, David R.
APPLICANT: Hanneal, David R.
APPLICANT: Hanneal, David R.
TITLE OF INVENTION: HUMAN GENOME-DERIVED SINGLE EXON NUCLEIC ACID PROBES USEFUL FOR TITLE OF INVENTION: GENER EXPRESSION ANALYSIS BY MICROARRAY
CURRENT APPLICATION WHORE: US 60/180,312
PRIOR PELLING DATE: 2000-00-02-04
PRIOR PELLING DATE: 2000-00-03-04
PRIOR PELLING DATE: 2000-00-03-04
PRIOR PELLING DATE: 2000-00-03-04
PRIOR PELLING DATE: 2000-10-04
PRIOR PELLING DATE: 2000-10-04
PRIOR PELLING DATE: 2000-10-04
PRIOR PELLING DATE: 2000-10-03-04
PRIOR PELLING DATE: 2000-10-03-04
PRIOR PELLING DATE: 2000-10-03-04
PRIOR PELLING DATE: 2001-0-13-04
PRIOR PELLING DATE: 2001
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                                                                                                        1 RKKTFLSVHEVMAVENYAKDSLQMITDQYNKESDDKYHFRIFRVLKVQRQ 50
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OTHER INFORMATION: EST HUMAN HIT: A1200857.1, EVALUE 5.00e-23
OTHER INFORMATION: SWISSPROT HIT: 060676, EVALUE 1.00e-01
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0; Indels
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SOFTWARE: Annomax Sequence Listing Engine vers. 1.1
0; Mismatches
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Patent No. US20020048763A1
GENERAL INFORMATION:
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Best Local Similarity
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US-09-864-761-48936
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LENGTH: 50
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APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein;
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein;
FILE REFERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT APPLICATION NUMBER: 60/230,230
PRIOR PILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 13
LENGTH: 49
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                                                                           Length 52;
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1 Similarity 100.0%; Pred. No. 4.1e-25;
52; Conservative 0; Mismatches 0;
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42.7%; Score 273; DB 9; I
Best Local Similarity 100.0%; Pred. No. 1.9e-23;
Matches 48; Conservative 0; Mismatches 0;
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Pred. No. 2.5e-23;
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100.0%; Pred. No. ...
0; Mismatches
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US-09-941-314-13
Sequence 13, Application US/09941314
; Patent No. US20020142396A1
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Best Local Similarity 100.
Matches 49; Conservative
; ORGANISM: Homo sapiens
US-09-941-314-14
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Best Local Similarity
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LENGTH: 48
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APPLICANT: Penn, Sharron G.
APPLICANT: Rank, David R.
APPLICANT: Rank, David K.
APPLICANT: Hanzel, David K.
APPLICANT: Chen, Wensheng
TITLE OF INVENTION: HUMAN GENOME-DERIVED SINGLE EXON NUCLEIC ACID PROBES USEFUL FOR TITLE OF INVENTION: GENE EXPRESSION ANALYSIS BY MICROARRAY
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D IN LUNG, SIGNAL = 1.5
D IN BRAIN, SIGNAL = 1.8
D IN PLACENTA, SIGNAL = 1.7
D IN ADULT LIVER, SIGNAL = 1.6
D IN FETAL LIVER, SIGNAL = 1.3
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HIT: O60676, EVALUE 1.00e-01
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CURRENT APPLICATION NUMBER: US/09/864,761
CURRENT APPLICATION NUMBER: US/09/864,761
CURRENT FILING DATE: 2001-03-23
PRIOR APPLICATION NUMBER: US 60/207,456
PRIOR APPLICATION NUMBER: US 60/207,456
PRIOR APPLICATION NUMBER: US 60/207,456
PRIOR PILING DATE: 2000-08-03
PRIOR FILING DATE: 2000-08-03
PRIOR PILING DATE: 2000-08-03
PRIOR APPLICATION NUMBER: US 60/236,359
PRIOR APPLICATION NUMBER: US 60/236,359
PRIOR PILING DATE: 2000-10-27
PRIOR PILING DATE: 2001-01-30
PRIOR PILING DATE: 2001-01-30
PRIOR PILING DATE: 2001-01-30
PRIOR PELING DATE: 2001-01-30
PRIOR PE
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Sequence 34822, Application US/09864761
Patent No. US20020048763A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EST HUMAN B
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ORGANISM: Homo sapiens
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OTHER INFORMATION: E. OTHER INFORMATION: E.
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40.9%; Score 262; DB 9; Length 50; 100.0%; Pred. No. 3.4e-22;

RESULT 9

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                                                                                                                                                                                                                                                                                                                                                                                                                                                   21 LPYQARKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHPRIFRVLKVQRQVTDHL 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 YQARKKTFLSVHEWAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3 YQARKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEY
                                                                                                                                                                                                                                                                                                                                                                                       0; Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HINVEMONTTCQKPETTNCVPQERELHKQVNCFFSVFAVPWFEQYKILNKSCSSD 115
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                                                                                                                                                                                                                                                                                                                                            Query Match
100.0%; Score 640; DB 9; Length 137;
Best Local Similarity 100.0%; Pred. No. 2.2e-64;
Matches 117; Conservative 0; Mismatches 0; Indels C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98.3%; Score 629; DB 9; Length 115;
100.0%; Pred. No. 3e-63;
tive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
FILE REPERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT APPLICATION NUMBER: 06/230,230
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO.
LENGTH: 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 15, Application US/09941314
PARTENT ON US20020142396A1
GENERAL INFORMATION:
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Proceagulant Protein;
FILE REFERENCE: 00-81PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 98.3
Best Local Similarity 100.
Matches 115, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQ ID NO 3
LENGTH: 115
TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                   ORGANISM: Homo sapiens
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 4
US-09-941-314-15
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US-09-941-314-3
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                                                                                                                                                                                                                                                                TYPE: PRT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 RQVTDHLEYHLNVEMQWTTCQKPETTNCVPQERELHKQVNCFFSVFAVPWFEQYKILNK 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     33 QYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPETTNCVPQERELHKQV
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; GENERAL INFORMATION:
; TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein; FILE REFERENCE: 00-81PC.
; CURRENT APPLICATION NUMBER: US/09/941,314; CURRENT APPLICATION NUMBER: US/09/941,314; CURRENT APPLICATION NUMBER: 00/1-09-01; PRIOR FILING DATE: 2001-09-01; NUMBER OF SEQ ID NOS: 19
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 52.2%; Score 334; DB 9; Length 59; Best Local Similarity 100.0%; Pred. No. 3e-30; Matches 59; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                    Query Match 69.7%; Score 446; DB 9; Length 80; Best Local Similarity 100.0%; Pred. No. 9.6e-43; Matches 80; Conservative 0; Mismatches 0; Indels
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Sequence 14, Application US/09941314

Sequence No. US20020142396A1

GENERAL INCPRATION:

TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein

TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein

TITLE OF ILING DATE: 200-81PC

CURRENT FILING DATE: 2001-08-29

PRIOR PILING DATE: 2001-09-01

NUMBER OF SEQ ID NOS: 19

SOFTWARE: FastSEQ for Windows Version 4.0

SEQ ID NO 14

LENGTH: 52
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: PREUSEQ for Windows Version 4.0
SEQ ID NO 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        93 NCFFSVFAVPWFEQYKILNK 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61 NCFFSVFAVPWFEQYKILNK 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: PRT
ORGANISM: Homo sapiens
US-09-941-314-16
                                                                                                                                                                                                                                              TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 5
US-09-941-314-16
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APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
FILE REFERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
FRICA APPLICATION NUMBER: 60/230,230
FRICA FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FASTESQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-941-314-4
; Sequence 4, Application US/09941314
; Patent No. US20020142396A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQ ID NO 4
LENGTH: 117
                                                                                                                                                                                 March 18, 2004, 14:15:06; Search time 70.8036 Seconds (without alignments) 427.913 Million cell updates/sec
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                                                                                                                                                                                                                                                                                                                     US-09-941-314-4
640
1 LPYQARKKTFLSVHEVMAVE......VFAVPWFEQYKILNKSCSSD 117
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1: /cgn2_6/ptodata/2/pubpaa/USO7_PUBCOMB.pep:*
2: /cgn2_6/ptodata/2/pubpaa/PCT_MEW_PUB_pep:*
3: /cgn2_6/ptodata/2/pubpaa/USO6_NEW_PUB_pep:*
4: /cgn2_6/ptodata/2/pubpaa/USO6_NEW_PUB_pep:*
5: /cgn2_6/ptodata/2/pubpaa/USO6_NEW_PUB_pep:*
6: /cgn2_6/ptodata/2/pubpaa/USO8_NEW_PUB_pep:*
7: /cgn2_6/ptodata/2/pubpaa/USO8_NEW_PUB_pep:*
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18: /cgn2_6/ptodata/2/pubpaa/USO6_PUBCOMB.pep:*
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1049977 segs, 258955339 residues
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Maximum Match 100%
Listing first 45 summaries
                                                                                                                             OM protein - protein search, using sw model
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Gapop 10.0 , Gapext 0.5
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Maximum DB seq length: 200000000
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Query
Match 1
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Perfect score:
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; Sequence 2, Application US/09941314
; Patent No. US20020142396A1
                                                                                                                                                        US-09-941-314-2
                                                                                                                                            RESULT 2
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                                                                                                                   Sequence 48936, /
Sequence 10, Appl
                                                                           Sequence 17, App
Sequence 13, App
Sequence 34822,
                        Sequence 3, A Sequence 15, Sequence 16, Sequence 14,
Sequence 4,
                                                                                                                              Sequence 1
Sequence 1
Sequence 6
Sequence 8
            Sequence
                                US-09-941-314-15
US-09-941-314-16
US-09-941-314-14
US-09-941-314-17
US-09-941-314-17
US-09-864-761-34822
US-09-941-314-10
US-09-941-314-12
US-09-941-314-12
                                                             45.0
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Sequence 2, Appli Sequence 2, Appli Sequence 19, Appl Sequence 14, Appl	15, 48, 46, 46, 46, 46, 46, 46, 46, 46, 46, 46	Sequence 2608, App Sequence 5, Appli Sequence 5, Appli Sequence 5, Appli Sequence 18, Appl Sequence 48, Appl	27 4 4	Sequence 24, Appl Sequence 2, Appl Sequence 2, Appl Sequence 5, Appl Sequence 14, Appl Sequence 141, Appl Sequence 77, Appl
13 US-10-006-467-2 14 US-10-235-148-2 8 US-08-849-303-19 14 US-10-168-425-14 9 US-09-775-932-16		rp	5555 5	9 US-09-775-932-24 9 US-09-775-932-4 8 US-08-849-303-22 9 US-09-940-497-5 9 US-09-974-298-141 14 US-10-241-220-77
145 145 127 145	139 121 141 141	181 165 165 140	1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
27.7 27.7 26.8 26.8 26.8	26.6 25.1 25.1 25.1	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
177.5 177.5 171.5 171.5	170.5 170.5 160.5 160.5	159.5 157.5 157.5 156.5	1555 1555 1555 1555 1555 1555	146.5 146.5 146.5 146.5
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ALIGNMENTS

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                                                                                                                                                                                                                   1 LPYQARKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHL 60
                                                                                                                                                                                                                                                                     0; Gaps
                                                                                       Query Match 100.0%; Score 640; DB 9; Length 117; Best Local Similarity 100.0%; Pred. No. 1.8e-64; Matches 117; Conservative 0; Mismatches 0; Indels C
TYPE: PRT
ORGANISM: Homo sapiens
                                                 US-09-941-314-4
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APPLICANT: Werner, Sabine
APPLICANT: Werner, Sabine
APPLICANT: Halle, Jorn-Peter
APPLICANT: Halle, Jorn-Peter
APPLICANT: Halle, Jorn-Peter
APPLICANT: Halle, Jorn-Peter
APPLICANT: Goppelt, Johannes
APPLICANT: Goppelt, Andreas
APPLICANT: Goppelt, Andreas
TITLE OF INVENTION: Use of Polypeptides or Nucleic Acids for
TITLE OF INVENTION: the Diagnosis or Treatment of Skin Disorders and Wound
TITLE OF INVENTION: Active Substances
TITLE OF INVENTION: Active Substances
FILE REPRENENCE: 50125/044002
FILE REPRENENCE: 50125/044002
GURRENT FILING DATE: 2001-06-20
PRIOR APPLICATION NUMBER: US 60/222,081
PRIOR APPLICATION NUMBER: DE 10030149.5
PRIOR FILING DATE: 2000-06-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  35 EADANEEGVRRALDFAVSEYNKGSNDAYHSRAIQVVRARKQLVAGVNYFLDVEMGRTTCT 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15 EVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 25.1%; Score 160.5; DB 4; Length 140; Best Local Similarity 32.4%; Pred. No. 5.1e-12; Matches 34; Conservative 24; Mismatches 44; Indels 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        75 KPET--INC-VPQERELHKQVNCFFSVFAVPWFEQYKILNKSCSS 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
GURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/744,138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE: Human Genome Sciences, Inc. STREET: 9410 Key West Avenue CITY: Rockville STATE: Maryland COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 6, Application US/08744138
Patent No. 6011012
GENERAL INFORMATION:
APPLICANT: Gentz, Reiner L.
APPLICANT: Ni, Jian
APPLICANT: Rosen, Craig A.
APPLICANT: Yu, Guo-Liang
TITLE OF INVENTION: Human Cystatin E
NUMBER OF SEQUENCES: 13
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQ ID NOS: 84
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTORNEY AGENT INFORMATION:
NAME: Brookes, A. Anders
REGISTRATION NUMBER: 36,373
REPERENCE/DOCKET NUMBER: PF202P1
TELECOMMUNICATION INFORMATION:
TELEPHONE: 301 309 8504
Application US/09886319A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: PRT
ORGANISM: Mus musculus
                         Patent No. 6586185
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20850
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US-08-744-138-6
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              26 SLOWITDOYNKESDDKYHFRIFRUKVORQVTDHLEYHLNVEMQWTTCQK--PETTNCVP 83
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4.
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                                                                                                                                                                                TITLE OF INVENTION: RECOMBINANT 3-DES-OH-CYSTATIN C PRODUCED BY EXPRESSION IN A PROCARYOTIC HOST CELL NUMBER OF SEQUENCES: 8
CURRENT APPLICATION DATA:
PRIOR APPLICATION NUMBER: US/07/929,290
FILING DATE: 13-AUG-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 440,221
FILING DATE: 21-NOV-1989
FILING DATE: 20-NAY-1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
APPLICANT: University of British Columbia
APPLICANT: University of British Columbia
TITLE OF INVENTION: Production and use of Modified Cystatins
FILE REPERENCE: 58069
CURRENT PLILIG DATE: 2001-02-02
RICHARD APPLICATION NUMBER: GA99/00717
PRIOR APPLICATION NUMBER: 60/095,503
PRIOR APPLICATION NUMBER: 60/095,503
PRIOR FILING DATE: 1999-08-05
NUMBER OF SEQ ID NOS: 32
SOFTWARE: PatentIn Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              25.3%; Score 162; DB 6; Length 146; 34.7%; Pred. No. 3.5e-12;
                                                                              RESULT 12
5432264-6
: Patent No. 5432264
; APPLICANT: GRUBB, ANDERS; LUNDWALL, AKE; ABRAHAMSON, MAGNUS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21; Mismatches 41; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  106 LDNCPFHDQPHLKRKAFCSFQIYAVPW-QQTMTLSKSTCQD 145
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  107 HDEPEMAKYTTCTFVVYSIPWLNQIKLLESKC 138
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; Sequence 8, Application US/09775932; Patent No. 6534477
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ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity
Matches 35; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH: 146
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US-09-886-319A-46
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US-09-775-932-8
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Query Match

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SEQ ID NO:6:

5432264-6

SEQ ID NO 8

Matches

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Gaps

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; IMMEDIATE SOURCE:
; LIBRARY: GenBank
; CLONE: 118195
US-09-314-777-4
TOPOLOGY: linear
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US-08-849-303-15
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TELEX: 13
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US-09-314-777-4
; Sequence 4, Application US/09314777
; Patent No. 6110686
; GENERAL INFORMATION:
; APPLICANT: Bandman, Olga
; TITLE OF INVENTION: NOVEL HUMAN CYSTATIN-LIKE
; TITLE OF INVENTION: PROTEIN
; NUMBER OF SEQUENCES: 4
; CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ZUPINION
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STREET: 3174 Porter Drive
CITY: Palo Alto
                                                              NAME: Billings, Lucy J.
REGISTRATION VNUBER: 36,79
REFERENCE/DOCKET NUMBER: PF-0193 US
TELEPOMNICATION INFORMATION:
TELEPAX: 415-845-0555
TELEPAX: 415-845-4166
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 139 amino acids
TYPE: amino acid
STRANDENESS: single
TOPOLOGY: linear
IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME: Billings, Lucy J.
REGISTRATION VUMBER: 36,749
REFERENCE/DOCKET NUMBER: PF-0193 US
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-85-0555
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
                           ATTORNEY/AGENT INFORMATION: NAME: Billings, Lucy J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
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TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; LIBRARY: GenBank
; CLONE: 118195
US-08-791-522-4
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26 SLOWITDOYNKESDDKYHPRIFRVLKVQROVTDHLEYHLNVEMOWTTCOKP--ETTNC-V 82
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Length 139;
                                         Indels
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SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION UNBER: US/08/849,303
FILING DATE: 21-MAY-1997
CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: Jackson Esg., David A.
REGISTRATION NUMBER: 26,742
REFRENCE/DOCKET UNBER: 1321-1-003
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION:
                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
APPLICANT: AFKINGO, Howard J.
APPLICANT: McPherson, Michael J.
APPLICANT: Urwin, Peter E.
TITLE OF INVENTION: MODIFIED PROTEINASE INHIBITORS
NUMBER OF SEQUENCES: 79
CORRESPONDENCE ADDRESS:
26.6%; Score 170.5; DB 3; 37.0%; Pred. No. 3e-13; live 19; Mismatches 36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      36;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         E: Klauber & Jackson
411 Hackensack Avenue, 4th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS OSTWARE: PatentIn Policians
                                                                                                                                                                                                                                                                                                     Sequence 15, Application US/08849303 Patent No. 6680424
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INFORMATION FOR SEQ ID NO: 15:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 139 amino acids
TYPE: amino acid
STRANDEDNESS: single
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Best Local Similarity 37.04
Matches 34; Conservative
  Query Match
Best Local Similarity 37.04
Matches 34; Conservative
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NO
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MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New Jersey
USA
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STATE: New Jerse
COUNTRY: USA
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HYPOTHETICAL:
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CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/791,522
FILING DATE: Filed Herewith
PLIASSIFICATION: 514
PLIASSIFICATION DATA:
APPLICATION NUMBER:
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Patent No. 5935817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: Gallus sp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  94304
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LENGTH: 116
TYPE: PRT
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                                                                                                                                                                                                                                                             Length 142;
                                                                                                                                                                                                                                                         Query Match 29.5%; Score 188.5; DB 3; Length 1 Best Local Similarity 40.4%; Pred. No. 1.9e-15; Matches 38; Conservative 23; Mismatches 30; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 19, Application US/08849303
Patent No. 6680424
GENERAL INFORMATION:
APPLICANT Atkinson, Howard J.
APPLICANT: McPherson, Michael J.
APPLICANT: Urwin, Peter E.
TITLE OF INVENTION: MODIFIED PROTEINASE INHIBITORS
NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC comparible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/849,303
FILING DATE: 21-MAY-1997
CLASSIFICATION: 514
                                                                                                                                                                                                                                                                                                                                                                                                                                        82 VPQER-ELHKQVNCFFSVFAVPWFEQYKILNKSC 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CITY: Hackensack Avenue, 4th Floor STATE: New Jersey COUNTRY: USA
PRIOR FILING DATE: 1999-11-01
PRIOR APPLICATION NUMBER: 60/109,217
PRIOR FILING DATE: 1998-11-20
PRIOR APPLICATION NUMBER: 60/156,382
PRIOR FILING DATE: 1999-09-28
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FastSEQ for Windows Version 3.0
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26,742
29. 1321-1-003
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NAME: Jackson Esq., David A.
REGISTRATION NUMBER: 26,742
REFERENCE/DOCKET NUMBER: 1321-1
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECAX: 201-343-1684
INFORMATION FOR ESQ ID NO: 19:
SEQUENCE CHARACTERISTICS:
LENGTH: 127 amino acids
STRANDEDNESS: single
TOPOLOGY: linear
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Best Local Similarity 33.3
Matches 35; Conservative
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NO
                                                                                                                                                                          TYPE: PRT
ORGANISM: Homo sapiens
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US-08-849-303-19
                                                                                                                                      SEQ ID NO 4
LENGTH: 142
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22 BADASEEGVQRALDFAVSEYNKGSNDAYHSRAIQVVRARKQLVAGINYYLDVEMGRTICT 81
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15 EVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQ 74
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Fatent No. 6534477
GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION:
FILE REFERENCE: 58069
CURRENT APPLICATION NUMBER: US/09/775,932
CURRENT FILING DATE: 2001-02-02
PRIOR APPLICATION NUMBER: G99/00717
PRIOR APPLICATION NUMBER: 60/095,503
PRIOR FILING DATE: 1999-08-05
NUMBER OF SEQ ID NOS: 32
SOFTWARE: PATENTIN OFF: 2.0
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                                                                                                                                                                                                                                                     75 KPET--TNC-VPQERELHKQVNCFFSVFAVPWFEQYKILNKSCSS 116
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26.6%; Score 170.5; DB 4;
Best Local Similarity 37.0%; Pred. No. 2.3e-13;
Matches 34; Conservative 19; Mismatches 36;
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APPLICANT: Bandman, Olga
APPLICANT: Bandman, Olga
APPLICANT: Gali, Surya Martine General 
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84 HDEPEMAKYTTCTFVVYSIPWLNQIKLLESKC 115
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MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version 2.0
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                                                                                                                                                                                                                                                                              Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                29.5%; Score 188.5; DB 3; Length 141; 34.5%; Pred. No. 1.9e-15; tive 25; Mismatches 38; Indels 13; Gaps
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APPLICANT: Feldhaus, Andrew
ITILE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN T
FILE REFERENCE: 98-72 CI
CURRENT APPLICATION NUMBER: US/09/617,302
CURRENT FILING DATE: 2000-07-17
PRIOR APPLICATION NUMBER: 09/431,480
PRIOR FILING DATE: 1999-11-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: HOlloway, James L.
APPLICANT: Holloway, James L.
APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN GURRENT APPLICATION NUMBER: US/09/431,480
CURRENT APPLICATION NUMBER: 60/109,217
EARLIER PILING DATE: 1998-11-20
EARLIER PILING DATE: 1998-11-20
EARLIER PILING DATE: 1999-109-28
EARLIER FILING DATE: 1999-09-28
                                                                                                                                                                                                                                                                              30; Indels 14;
                                                                                                                                                                                                                                    33.4%; Score 214; DB 3; Length 142; 37.1%; Pred. No. 1.4e-18; tive 29; Mismatches 30; Indels 1
PRIOR FILING DATE: 1998-11-20
PRIOR APPLICATION NUMBER: 60/156,382
PRIOR FILING DATE: 1999-09-28
NUMBER OF SEQ ID NOS: 22
SOFTWARE: RestSEQ for Windows Version 3.0
SEQ ID NO 3
LENGTH: 142
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SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 2
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Best Local Similarity 37.1
Matches 43; Conservative
                                                                                                                                                                        ; ORGANISM: Mus musculus
US-09-617-302-3
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Best Local Similarity
Matches 40; Conserva
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US-09-431-480-2
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                                                                                                                                                    TYPE: PRT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 4, Application US/09431480
| Sequence 4, Application US/09431480
| Patent No. 6235708
| GENERAL INFORMATION:
| APPLICANT: Holloway, James L. APPLICANT: Holloway, James L. APPLICANT: Feldhaus, Andrew TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN T FILE REFERENCE: 98-72
| CURRENT APPLICATION NUMBER: US/09/431,480
| CURRENT FILING DATE: 1999-11-00 |
| EARLIER FILING DATE: 1999-11-20 |
| EARLIER FILING DATE: 1999-09-28 |
| NUMBER OF SEQ ID NOS: 22 |
| SOFTWARE: FastSEQ for Windows Version 3.0 |
| SEQ ID NO 4
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                                                                                                                                                                                                                                                                                                                                                                  13; Gaps
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APPLICANT: Holloway, James L.
APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN T
FILE REFERENCE: 98-72 C1
CURRENT APPLICATION NUMBER: US/09/617,302
CURRENT FILING DATE: 2000-07-17
PRIOR APPLICATION NUMBER: 09/431,480
                                                                                                                                                                                                                                                                                                             Length 141;
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                                                                                                                                                                                                                                                                                                             Query Match 29.5%; Score 188.5; DB 3; Best Local Similarity 34.5%; Pred. No. 1.9e-15; Matches 40; Conservative 25; Mismatches 38;
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40.4%; Pred. No. 1.9e-15;
iive 23; Mismatches 30;
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PRIOR APPLICATION NUMBER: 60/109,217
PRIOR FILING DATE: 1998-11-20
PRIOR APPLICATION NUMBER: 60/156,382
PRIOR FILING DATE: 1999-09-28
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 2
LENGTH: 141
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Patent No. 6245529
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ORGANISM: Homo sapiens
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Sequence 46, Appli
Sequence 6, Appli
Sequence 6, Appli
Sequence 24, Appli
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Sequence 5, Appli
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Sequence 18, Appli
Sequence 2, Appli
Sequence 2, Appli
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Sequence 3, Appli
Sequence 3, Appli
                                                                                                                                         March 18, 2004, 14:07:11 ; Search time 29:9464 Seconds (without alignments) 201.701 Million cell updates/sec
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Sequence 19, A
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1 LPYQARKKTFLSVHEVMAVE.....VFAVPWFEQYKILNKSCSSD 117
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Sequence 4, 7
Sequence 15,
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/cgn2 6/ptodata/2/iaa/5A_COMB.pep:*
/cgn2 6/ptodata/2/iaa/5B_COMB.pep:*
/cgn2 6/ptodata/2/iaa/6A_COMB.pep:*
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/cgn2 6/ptodata/2/iaa/PCTUS_COMB.pep:*
/cgn2 6/ptodata/2/iaa/PCTUS_COMB.pep:*
/cgn2 6/ptodata/2/iaa/PCTUS_COMB.pep:*
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
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US-09-617-302-3
US-09-617-302-2
US-09-617-302-2
US-09-617-302-4
US-09-617-302-4
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US-08-791-522-4
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US-08-849-303-15
US-08-849-303-15
US-08-849-303-24
US-09-441-138-6
US-09-491-497-6
US-09-491-497-6
US-09-491-497-6
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US-09-491-480-5
US-09-617-302-5
US-09-617-302-5
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US-09-617-302-5
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US-09-617-302-5
US-09-617-302-5
US-09-617-302-5
US-09-775-932-2
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-09-886-319A-46
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US-08-791-522-3
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Maximum Match 100%
Listing first 45 summaries
                                                                                              protein search, using sw model
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Gapop 10.0 , Gapext 0.5
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Maximum DB seq length: 2000000000
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Match Length
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Perfect score:
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61
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                                                               Appli
Appli
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SVHEVMAVENY ------AKDSLQWITDQYNKESDDKYHFRIFRUKVQRQVTDHLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        62 YHLNVEMQWTTCQKP--ETTNCVPQER-ELHKQVNCFFSVFAVPWFEQYKILNKSC 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN T
FILE REPERENCE: 99-72
CURRENT APPLICATION NUMBER: US/09/431,480
CURRENT FILING DATE: 1999-11-01
SARLIER APPLICATION NUMBER: 60/109,217
SARLIER FILING DATE: 1999-11-20
SARLIER FILING DATE: 1999-09-28
NUMBER OF SEO ID NOS: 22
SOFTWARE: FASELSEQ for Windows Version 3.0
TENDOM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30; Indels 14; Gaps
                                    Sequence 6, A
Sequence 3, A
Sequence 47,
Sequence 37,
Sequence 17,
Sequence 17,
Sequence 24,
Sequence 24,
Sequence 24,
Sequence 24,
Sequence 24,
Sequence 5, A
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 3, Application US/09617302
Patent No. 6245529
GENERAL INFORMATION:
APPLICANT: Holloway, James L.
APPLICANT: Holloway, James L.
APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN 1
TITLE PEPERENCE: 98-72
CURRENT APPLICATION NUMBER: US/09/617,302
CURRENT APPLICATION NUMBER: US/09/411,480
PRIOR APPLICATION NUMBER: 60/109,217
                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                            Sequence
             Sequence
                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 142;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   33.4%; Score 214; DB 3;
1larity 37.1%; Pred. No. 1.4e-18;
Conservative 29; Mismatches 30.
                                                              US-09-528-4368-3
US-09-886-319A-47
US-09-940-497-3
US-09-976-594-37
US-08-849-303-17
                                                                                                                                                                                US-08-744-138-5
US-09-431-480-11
US-09-617-302-11
US-09-241-376-5
                                                                                                                              PCT-US95-07135-9
US-08-849-303-16
                                                                                                                                                        US-09-775-932-24
US-09-775-932-4
                                                   JS-09-241-376-3
                                                                                                                                                                                                                                                              ALIGNMENTS
                                                                                                                                                                                                                                                                                                                          Sequence 3, Application US/09431480
Patent No. 6235708
GENERAL INFORMATION: James L.
APPLICANT: Feldhaus, Andrew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; ORGANISM: Mus musculus US-09-431-480-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
 444444444444444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Simil
Matches 43; (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 142
TYPE: PRT
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The present invention relates to single exon nucleic acid probes for measuring human gene expression in a sample derived from human heart (see BABA1305). The present sequence is a protein encoded by one such probe. The probes may be used for predicting, measuring and displaying gene expression in samples derived from the human heart via microarrays. By measuring gene expression, the probes are useful for predicting, diagnosing, grading, staging, monitoring and prognosing diseases of the human heart and vascular system e.g. cardiovascular disease, hypertension, cardiac arrhythmias and congenital heart disease. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences
                                                                                        Single exon nucleic acid probes for analyzing gene expression in human
                                                                                                                                                           Claim 15; SEQ ID NO 21294; 530pp; English
  Rank
Chen W,
Hanzel DK,
Penn SG,
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Sequence 50 AA;

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Gaps
                           ö
                                                   55
                                                                   6 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQ
Score 262; DB 4; Length 50;
Pred. No. 2.9e-22;
                          0; Indels
        100.0%; Preα. ...
ive 0; Mismatches
 40.9%;
             Best Local Similarity 100.
Matches 50; Conservative
Query Match
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AAM67252 standard; protein; 50 AA

AAM67252;

06-NOV-2001

Human; bone marrow expressed exon; gene expression analysis; probe; microarray; cancer; leukaemia; lymphoma; myeloma. Human bone marrow expressed probe encoded protein SEQ ID NO: 27558

Homo sapiens

WO200157276-A2

09-AUG-2001

30-JAN-2001; 2001WO-US000668

04-FEB-2000; 2000US-0180312P. 26-MAY-2000; 2000US-0207456P. 30-JUN-2000; 2000US-0060840B. 03-AUG-2000; 2000US-00532366. 21-SEP-2000; 2000US-0234687P. 27-SEP-2000; 2000US-02359P. 04-OCT-2000; 2000GB-00024263

(MOLE-) MOLECULAR DYNAMICS INC

Rank Chen W, Penn SG, Hanzel DK, Human genome-derived single exon nucleic acid probes useful for analyzing gene expression in human bone marrow.

Example 4; SEQ ID NO 27558; 658pp + Sequence Listing; English

The present invention provides a number of single exon nucleic acid probes which are derived from genomic sequences expressed in the human bone marrow. They can be used to measure gene expression in bone marrow samples, which may enable the improved diagnosis and treatment of cancers such as 1ymphoma, leukaemia and myeloma. The present sequence is a protein encoded by one of the probes of the invention 888888888

Sequence 50 AA;

Gaps ö Length 50; Indels 40.9%; Score 262; DB 4; I 100.0%; Pred. No. 2.9e-22; iive 0; Mismatches 0; Query Match
Best Local Similarity 100.4
Matches 50, Conservative

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Search completed: March 18, 2004, 14:14:56 Job time : 106.089 secs

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30-JUN-2000) 2000US-00608408
03-MUG-2000) 2000US-0053346.
21-SEP-2000) 2000US-0234687P-
27-SEP-2000) 2000US-0236359P-
04-OCT-2000) 2000GB-00024263.
                                                                                                                                                                                                                                                                                              30-JAN-2001; 2001WO-US000662
                                                                                                                                                                                                                                                                                                      04-FEB-2000; 2000US-0180312P
26-MAY-2000; 2000US-0207456P
             Hanzel DK,
                      WPI; 2001-496933/54
                                                                                                                                                   Sequence 50 AA;
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                                                                                                                                                                                                                                 01-FEB-2002
                                                                                                                                                                                                                                                                  Homo sapiens.
                                                                                                                                                                                                                                                                                    09-AUG-2001
                                                                                                                                                                                                                        ABB28913;
             SG,
                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                          cancer.
             Penn
                                                                                                                                                                                                     RESULT 13
ABB28913
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SG, Penn The invention relates to a spatially-addressable set of single exon nucleic acid probes for measuring gene expression in a sample derived from human breast and BT 474 cells. The method involves contacting the probes with a collection of detectably labelled nucleic acids derived from mRNA of human breast, and then measuring the label bound to each probe of the microarray. The probes are useful for verifying the expression of regions of genomic DNA predicted to encode proteins. They are useful for gene discovery, and for determining predisposition and/or prognosing breast disease. Gene expression analysis is useful for assessing the toxicity of chemical agents on cells. The microarray of this invention presents a far greater diversity of probes for measuring gene expression, with far less bias than expressed sequence tag microarrays. The method is suitable for rapid production of functional information from genomic sequence. The present sequence is a peptide encoded by a single exon nucleic acid probe of the invention. Note: The sequence data for this patent did not form part of the printed second in the present of the present of the printed second in the present of the printed second in the present of the printed second in the present of the present New spatially-addressable set of single exon nucleic acid probes, useful for measuring gene expression in sample derived from human breast, comprises number of single exon nucleic acid probes. Claim 27; SEQ ID NO 15357; 327pp + Sequence Listing; English. specification, but was obtained in electron
at ftp.wipo.int/pub/published_pct_sequences Rank DR; (MOLE-) MOLECULAR DYNAMICS INC Chen W,

40.9%; Score 262; DB 4; Length 50; 100.0%; Pred. No. 2.9e-22; 0; Indels Best Local Similarity 100.0%; Pred. No. 2.9

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Gaps

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ABB28913 standard; peptide; 50 AA (first entry)

Human; microarray; single exon probe; gene expression; breast; disease; Peptide #1564 encoded by breast cell single exon nucleic acid probe.

(MOLE-) MOLECULAR DYNAMICS INC

The invention relates to a spatially-addressable set of single exon nucleic acid probes for measuring gene expression in a sample derived from human breast and BT 474 cells. The method involves contacting the probes with a collection of detectably labelled nucleic acids derived from expension of the probes are useful for verifying the probes of the microarray. The probes are useful for verifying the captesion of regions of genomic DNA predicted to encode proteins. They are useful for gene discovery, and for determining predisposition and/or prognosing breast disease. Gene expression analysis is useful for assessing the toxicity of chemical agents on cells. The microarray of this invention presents a far greater diversity of probes for measuring gene expression, with far less bias than expressed sequence tag microarrays. The method is suitable for rapid production of functional information from genomic sequence. The present sequence is a peptide encoded by a single exon nucleic acid probe of the invention. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at the wipo.int/pub/published_pct_sequences New spatially-addressable set of single exon nucleic acid probes, useful for measuring gene expression in sample derived from human breast, Claim 27; SEQ ID NO 11881; 327pp + Sequence Listing; English. comprises number of single exon nucleic acid probes. Rank DR; Chen W, Hanzel DK, WPI; 2001-496933/54

Sequence 50 AA;

ö Length 50; Indels 'Match
Local Similarity 100.0%; Pred. No. 2.9e-22;
tes 50; Conservative 0; Mismatches 0; Query Match Best Loca Matches

ö

Gaps

ABB19524 standard; protein; 50 ABB19524; RESULT 14 ABB19524

¥

(first entry) 23-JAN-2002

Protein #1523 encoded by probe for measuring heart cell gene expression.

Human, gene expression, heart, microarray, vascular system; cardiovascular disease, hypertension, cardiac arrhythmia; congenital heart disease.

ното варіепв

WO200157274-A2

09-AUG-2001.

04-FEB-2000; 2000US-0180312P. 30-JAN-2001; 2001WO-US000666

26-MAY-2000; 2000US-0207456P. 30-UUN-2000; 2000US-0060B408 03-AUG-2000; 2000US-00532366. 21-SEP-2000; 2000US-0234687P. 27-SEP-2000; 2000US-0236359P.

(MOLE-) MOLECULAR DYNAMICS INC

04-OCT-2000;

RESULT 10 ABB34086

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Human genome-derived single exon nucleic acid probes useful for analyzing gene expression in human placenta.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present invention relates to single exon nucleic acid probes (SENP: see AAI31315-AAI57546). The present sequence is a peptide encoded by one such probe. The probes are useful for producing a microarray for predicting, measuring and displaying gene expression in samples derived from human placenta. The probes are useful for antenatal diagnosis of human genetic disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human; microarray; single exon probe; gene expression; breast; disease;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQ
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40.9%; Score 262; DE
Best Local Similarity 100.0%; Pred. No. 2.9
Matches 50; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 27; SEQ ID NO 27814; 654pp; English.
                                                                                                                                                                                                                                                                                                                  Chen W, Rank DR;
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                                                                                                                                                                      30-JUN-2000; 2000US-00608408.
03-AUG-2000; 2000US-00632366.
21-SEP-2000; 2000US-0234687P.
                                                                                                                                                                                                                          27-SEP-2000; 2000US-0236359P.
04-OCT-2000; 2000GB-00024263.
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2000US-00608408.
2000US-00632366.
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27-SEP-2000; 2000US-0236359P
04-OCT-2000; 2000GB-00024263.
                                                                                                    30-JAN-2001; 2001WO-US000663
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABB32389 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                  Hanzel DK,
                                                                                                                                                                                                                                                                                                                                                     WPI; 2001-488897/53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 50 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200157271-A2.
                                  WO200157272-A2
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30-JUN-2000;
03-AUG-2000;
 Homo sapiens.
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03-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          04-FEB-2000;
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                                                                   09-AUG-2001
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                                                                                                                                                                                                                                                                                                                  Penn SG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABB32389;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The invention relates to a single exon nucleic acid probe for measuring human gene expression in a sample derived from human foetal liver. The single exon nucleic acid probes may be used for predicting, measuring and displaying gene expression in samples derived from human fetal liver. The present sequence is a peptide encoded by a single exon nucleic acid probe of the invention. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      genome-derived single exon nucleic acid probes useful for analyzing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Peptide #1582 encoded by probe for measuring placental gene expression.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                           Human; foetal liver; gene expression; single exon nucleic acid probe.
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                                                                                                                                                        Peptide #1592 encoded by human foetal liver single exon probe.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 27; SEQ ID NO 26721; 639pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRULKVQRQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 50;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       40.9%; Score 262; DB 4; I
100.0%; Pred. No. 2.9e-22;
tive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rank DR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene expression in human fetal liver
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                                                   ABB34086 standard; peptide; 50 AA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (MOLE-) MOLECULAR DYNAMICS INC
                                                                                                                                                                                                                                                                                                                                                                                      2000US-0207456P.
2000US-00608408.
2000US-00632366.
2000US-0234687P.
2000US-023559P.
2000GB-00024263.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Chen W,
                                                                                                                                                                                                                                                                                                                                    30-JAN-2001; 2001WO-US000669
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 50 AA;
                                                                                                                                                                                                                                                                WO200157277-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                         21-SEP-2000;
27-SEP-2000;
04-OCT-2000;
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30-JUN-2000;
                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                       04-FEB-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                          03-AUG-2000;
                                                                                                                       04-FEB-2002
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                                                                                      ABB34086;
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Human

Matches

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Gaps

ö 25 20

Length 50; Indels

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The intention describes an isolated mammalian cystature (2098) protein in an individual and thus inhibiting cancer procoagulant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal fuluid viscosity, enhancing viability of cryopreserved sperm, sperm motility and fertilisation; and as antigenic peptides to generate antibodies. Zcy88 is useful as research reagent for characterising sites of interaction between Zcy88 and its receptor. Zcy88 is useful in enhancing fertilisation during assisted reproduction in humans and in enhancing fertilisation during assisted reproduction in humans and in animals. Anti-(I) antibodies are useful to screen biological samples like presence of Zcy88. The antibodies are also useful to isolate large quantities of Zcy88 protein and DNA sequences that encode Zcy88 genes. The polymucleotide encoding (I) is useful to detect and to localise the cypnucleotide probes are useful for in vivo diagnosis. The polymucleotide probes are useful for in vivo diagnosis. The polymucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation, in the Zcy88 gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zcy88 gene. This sequence represents an antigenic peptide of human cystatin-8 (Zcy88)
                                                                                                                                                                                                  ö
                      copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zcys8 gene. This sequence represents an antigenic peptide of human cystatin-8 (Zcys8)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
  Zcys8 gene like aneuploidy, gene
                                                                                                                                                                                                Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation; antigenic peptide.
                                                                                                                                                                                                                                                                                   48
                                                                                                                                                      Score 273; DB 5; Length 48;
                                                                                                                                                                                                                                                                   NVEMQWITCQKPETITNCVPQERELHKQVNCFFSVFAVPWFEQYKILNK
                                                                                                                                                                                                                                         NVEMOWTICOKPETINCVPOERELHKOVNCFFSVFAVPWFEQYKILNK
                                                                                                                                                                                            0; Indels
                                                                                                                                                                     100.0%; Pred. No. 1.5e-23; ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human cystatin-8 (Zcys8) antigenic fragment #11.
chromosomes contain a mutation in the Zcys8 copy number changes, insertions, deletions, rearrangements and genetic alterations that
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     면;
                                                                                                                                                                                                                                                                                                                                                                                             AAU79863 standard; peptide; 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29-AUG-2001; 2001WO-US026868.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-SEP-2000; 2000US-0230230P
                                                                                                                                                      42.78;
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                                                                                                                                                                                                48; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2002-383044/41
                                                                                                                                                   Query Match
Best Local Similarity
Matches 48; Conserv
                                                                                                           Sequence 48 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present invention relates to human single exon nucleic acid probes (SENP: see AAI10068-AAI28459). The present sequence is a peptide encoded by one such probe. The SENPs are derived from human Heida cells. The SENPs can be used to produce a single exon microartay, which can be used for measuring human gene expression in a sample derived from human cervical epithelial cells. By measuring gene expression, the probes are therefore useful in grading and/or staging of diseases of the cervix, notably cervical cancer. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human genome-derived single exon nucleic acid probes useful for analyzing gene expression in human cervical epithelial cells.
                                                                                                                                                                                                                                                                                 Peptide #1530 encoded by probe for measuring cervical gene expression.
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                                                       Gaps
                                                                                                                                                                                                                                                                                                              Probe; human; microarray; gene expression; cervical epithelial cell;
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                                                                                    32 DOYNKESDDKYHPRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPETTN
                          Length 49;
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                                                     Indels
                        Score 272; DB 5; L
Pred. No. 2.1e-23;
0; Mismatches 0;
                42.5%; Scor.
100.0%; Pred. No. 2...
... 0; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rank DR;
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                                                                                                                                                                                         AAM15096 standard; protein; 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (MOLE-) MOLECULAR DYNAMICS INC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   03-AUG-2000; 2000US-00632366.
21-SEP-2000; 2000US-0234687P.
27-SEP-2000; 2000US-0236359P.
                                                                                                                                                                                                                                                                                                                                                                                                                                               30-JAN-2001; 2001WO-US000670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           26-MAY-2000; 2000US-0207456P
30-JUN-2000; 2000US-00608408
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                                                       49; Conservative
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                                        Similarity
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                                                                                                                                                                                                                                                                                                                             cervical cancer
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Sequence 49 AA
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                                                                                                                                                                                                                       AAM15096;
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                          Query Match
Best Local 8
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Matches
                                                       Matches
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animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcy88. The antibodies are also useful to isolate large quantities of Zcy88 protein and DNA sequences that encode Zcy88 gene. The polynucleotide encoding (I) is useful to detect and to localise the expression of a Zcy88 gene in a biological sample and Zcy88 gene olygonucleotide probes are useful for in vivo diagnosis. The polynucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation in the Zcy88 gene like ansuploidy, gene copy number changes, insertions, restriction site changes and rearrangements and genetic alterations that inactivate the Zcy88 gene. This sequence represents an antigenic peptide of human cystatin-8 (Zcy88) 8888888888888888

Sequence 59 AA;

ö Gaps ö Length 59; 0; Indels 52.2%; Score 334; DB 5; I 100.0%; Pred. No. 2.2e-30; ive 0; Mismatches 0; Best Local Similarity 100. Matches 59; Conservative Query Match

54 ROVIDHLEYHLAVEMOWITCOKPETINCVPOERELHKOVNCPFSVFAVPWFEQYKILNK 112 1 RQVTDHLEYHLAVEMQWTTCQKPETTNCVPQERELHKQVNCFFSVFAVPWFEQYKILNK 59 ò

RESULT 6

AAU79864 standard; peptide; 52 AA

(first entry) 15-JUL-2002

AAU79864;

Human cystatin-8 (Zcys8) antigenic fragment #12.

Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation; antigenic peptide.

Homo sapiens

WO200220567-A2

14-MAR-2002

29-AUG-2001; 2001WO-US026868.

01-SEP-2000; 2000US-0230230P.

(ZYMO) ZYMOGENETICS INC

Bishop PD; Gao Z, Holloway JL,

WPI; 2002-383044/41.

Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.

Claim 2; Page 98; 100pp; English

The invention describes an isolated mammalian cystatin-8 (Zcy88) polypeptide (I). (I) is useful for: inhibiting cancer procoagulant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm antibidies. Zcy88 is useful as antigenic peptides to generate antibodies. Zcy88 is useful as research reagent for characterising sites of interaction between Zcy88 and its receptor. Zcy88 is useful in enhancing fertilisation during assisted reproduction in humans and in animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue bloops and autopsy material in vitro for the presence of Zcy88. The antibodies are also useful to isolate large quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes. AAUT)9864

AAUT)9864

AAUT)9864

AAUT)

XXX

AAUT)

XXX

AAUT)

XXX

AAUT)

XXX

AAUT)

The polynucleotide encoding (I) is useful to detect and to localise the expression of a Zcys8 gene in a biological sample and Zcys8 oligonucleotide probes are useful for in vivo diagnosis. The polynucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene rearrangements and genetic alterations that inactivate the Zcys8 and rearrangements and genetic alterations that inactivate the Zcys8 gene. This sequence represents an antigenic peptide of human cystatin-8 (Zcys8) 888888888888

Sequence 52 AA;

Gaps Length 52; Indels ö 45.0%; Score 288; DB 5; I 100.0%; Pred. No. 3.3e-25; 100.0%; Pred ... Query Match Best Local Similarity 100." Matches 52; Conservative

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1 KESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPETTNCVPQERE 52 36 KESDDKYHFRIFRULKVQRQVTDHLEYHLNVEMQWTTCQKPETTNCVPQERE

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RESULT 7

AAU79867 standard; peptide; 48 AA.

AAU79867;

(first entry) 15-JUL-2002 Human cystatin-8 (Zcys8) antigenic fragment #15.

Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation; antigenic peptide.

Homo sapiens.

WO200220567-A2.

14-MAR-2002.

29-AUG-2001; 2001WO-US026868

01-SEP-2000; 2000US-0230230P

(ZYMO) ZYMOGENETICS INC

Bishop PD; Holloway JL, Gao Z,

WPI; 2002-383044/41.

Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.

Claim 2; Page 99; 100pp; English.

polypeptide (I). (I) is useful for: inhibiting cancer proceagulant protein in an individual and thus inhibiting cancer proceagulant protein in an individual and thus inhibiting cancer proceagulant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal causity, enhancing viability of cryopreserved sperm, sperm motility and fertilisation; and as antigenic peptides to generate motility and fertilisation; and as antigenic peptides to generate of interaction between zcys8 and its receptor. Zcys8 is useful in enhancing fertilisation during assisted reproduction in humans and in animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue bliopsy and autopsy material in vitro for the polymucleotide encoding (I) is useful to detect and to localise the expression of a Zcys8 gene in a biological sample and Zcys8 caligonucleotide encoding (I) is useful in determining whether a subject's The invention describes an isolated mammalian cystatin-8 (2cys8)

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blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcys8. The antibodies are also useful to isolate large quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes. The polynucleotide encoding (I) is useful to detect and to localise the expression of a Zcys8 gene in a biological sample and Zcys8 oligonucleotide probes are useful for in vivo diagnosis. The polynucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene rearrangements and genetic alterations that inactivate the Zcys8 gene rearrangements and genetic alterations that inactivate the Zcys8 gene. This sequence represents an antigenic fragment of human cystatin-8
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Sequence 115 AA;

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                                                                               YQARKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEY
                                 Gaps
                                                                                                                      HINVEMOWTTCQKPETTNCVPQERELHKQVNCFFSVFAVPWFEQYKILNKSCSSD 117
                                                                                                                                       HINVEMQWITCQKPETINCVPQERELHKQVNCFFSVFAVPWFEQYKILNKSCSSD 115
                                ö
Score 629; DB 5; Length 115;
Pred. No. 1.2e-63;
                              0; Indels
             100.0%; Pred. No. 1.2
ive 0; Mismatches
   98.3%;
                              Matches 115; Conservative
                  Best Local Similarity
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 Query Match
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AAU79865 standard; peptide; 80

AAU79865;

(first entry) 15-JUL-2002

Human cystatin-8 (Zcys8) antigenic fragment #13.

Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation; antigenic peptide.

Homo sapiens

WO200220567-A2

14-MAR-2002

29-AUG-2001; 2001WO-US026868

01-SEP-2000; 2000US-0230230P

(ZYMO) ZYMOGENETICS INC

Bishop PD; Holloway JL,

WPI; 2002-383044/41.

Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.

Claim 2; Page 98; 100pp; English.

The invention describes an isolated mammalian cystatin-8 (Zcy88) polypeptide (I). (I) is useful for: inhibiting cancer procoagulant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm motility and fertilisation; and as antigenic peptides to generate antibodies. Zcy88 is useful as research reagent for characterising sites of interaction between Zcy88 and its receptor. Zcy88 is useful in enhancing fertilisation during assisted reproduction in humans and in AAUT9865
AAU

The invention describes an isolated mammalian cystatin-8 (Zcys8) polypeptide (I). (I) is useful for: inhibiting cancer procoagulant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm motility and fertilisation; and as antigenic peptides to generate antibodies. Zcys8 is useful as research reagent for characterising sites of interaction between Zcys8 and its receptor. Zcys8 is useful in enhancing fertilisation during assisted reproduction in humans and in

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animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zoys8. The antibodies are also useful to isolate large quantities of Zoys8 protein and DNA sequences that encode Zoys8 genes. The polynucleotide encoding (I) is useful to detect and to localise the expression of a Zoys8 gene in a biological sample and Zoys8 penes. Oligonucleotide probes are useful for in vivo diagnosis. The polynucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation in the Zoys8 gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zoys8 gene. This sequence represents an antigenic peptide of human cystatin-8 (Zoys8)
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                                                                                                                                                                                                                                                                                                                                           33 QYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPETTNCVPQERELHKQV
                                                                                                                                                                                                                                                                                                         Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Cystatin-8; Zcy88; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation; antigenic peptide.
                                                                                                                                                                                                                                                                        Length 80;
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                                                                                                                                                                                                                                                                      69.7%; Score 446; DB 5; I
100.0%; Pred. No. 5.6e-43;
ive 0; Mismatches 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAU79866 standard; peptide; 59 AA
                                                                                                                                                                                                                                                                                                                                                                                                                 93 NCFFSVFAVPWFEQYKILNK 112
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                                                                                                                                                                                                                                                                                                                                                                                                                                     61 NCFFSVFAVPWFEQYKILNK 80
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Matches 80; Conservative
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                                                                                                                                                                                                                                     Sequence 80 AA;
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us-09-941-314-4.mar18.rag

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quantities of Zcy88 protein and DNA sequences that encode Zcy88 genes. The polymucleotide encoding (I) is useful to detect and to localise the expression of a Zcy88 gene in a biological sample and Zcy88 oligonucleotide probes are useful for in vivo diagnosis. The polymucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation in the Zcy88 gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zcy88 gene.
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                                                                                                                                                                                                                                                                                                            0; Indels
                                                                                                                                                                                                                                                                                                            0; Mismatches
                                                                                                                                                                                                                                                                                       Best Local Similarity 100.
Matches 117; Conservative
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AAU79852 standard; protein; 137 AA (first entry) Human cystatin-8 (Zcys8) 15-JUL-2002 AAU79852; RESULT

Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation.

Homo sapiens

WO200220567-A2

14-MAR-2002

29-AUG-2001; 2001WO-US026868.

01-SEP-2000; 2000US-0230230P

(ZYMO) ZYMOGENETICS INC

Holloway JL, Gao Z,

Bishop PD;

WPI; 2002-383044/41

N-PSDB; ABK49522

Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.

Claim 2; Page 93-94; 100pp; English

polypeptide (I). (I) is useful for: inhibiting cancer proceagulant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm motility and fertilisation; and as antigenic peptides to generate antibodies. Zcy88 is useful as research reagent for characterising sites of interaction between Zcy88 and its receptor. Zcy88 is useful in enhancing fertilisation during assisted reproduction in humans and in animals. Anti-(I) antibodies are useful to screen biological samples like invention describes an isolated mammalian cystatin-8 (Zcys8)

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urine, saliva, tissue biopsy and autopsy material in vitro for the
                presence of 2cy88. The antibodies are also useful to isolate large quantities of 2cy88 protein and DNA sequences that encode 2cy88 genes. The polymucleotide encoding (1) is useful to detect and to localise the expression of a 2cy88 gene in a biological sample and 2cy88 coligonucleotide probes are useful for in vivo diagnosis. The polymucleotide encoding (1) is useful in determining whether a subject's chromosomes contain a mutation in the 2cy88 gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the 2cy88 gene.
                                                                                                                                                                                                                                                                                                                                                                                                                        21 LPYQARKKTFLSVHSVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHL 80
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation; antigenic fragment.
                                                                                                                                                                                                                                                                                                           Length 137;
                                                                                                                                                                                                                      This is the amino acid sequence of human cystatin-8 (Zcys8)
                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                       100.0%; Score 640; DB 5;
ilarity 100.0%; Pred. No. 8.6e-65;
Conservative 0; Mismatches 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAU79853 standard; protein; 115 AA
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les 117; Conserv
                                                                                                                                                                                                                                                                Sequence 137 AA;
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Matches
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GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
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OM protein - protein search, using sw model

March 18, 2004, 14:02:15; Search time 106.089 Seconds (without alignments) 311.606 Million cell updates/sec Run on:

1 LPYQARKKTFLSVHEVMAVE......vFAVPWFEQYKILNKSCSSD 117 US-09-941-314-4 640 Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

1586107 seqs, 282547505 residues Searched:

1586107 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

A_Geneseq_29Jan04:* Database :

geneseqp2003as: * geneseqp2003bs: * geneseqp2000s:* geneseqp2001s:* geneseqp2002s:* geneseqp1980s:* geneseqp1990s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

geneseqp2004s:

STIMMARIES

	Description	Aau79854 Human cys	Aau79852 Human cys	Aau79853 Human cys	Aau79865 Human cys	Aau79866 Human cys	Human	Aau79867 Human cys	Aau79863 Human cys	Aam15096 Peptide #	Abb34086 Peptide #	Aam27545 Peptide #	Abb32389 Peptide #		Abb19524 Protein #	Aam67252 Human bon	Aam54871 Human bra	Abg48915 Human liv	Aam02833 Peptide #	Abg36903 Human pep	Human	Aae02404 Murine cy	Aae04433 Mouse cys	Adal4374 Mouse spe	Add46708 Rat Prote	Add46704 Rat Prote
SUMMAKIES	ΩI	AAU79854	AAU79852	AAU79853	AAU79865	AAU79866	AAU79864	AAU79867	AAU79863	AAM15096	ABB34086	AAM27545	ABB32389	ABB28913	ABB19524	AAM67252	AAM54871	ABG48915	AAM02833	ABG36903	AAU79860	AAE02404	AAE04433	ADA14374	ADD46708	ADD46704
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de	Query	100.0	100.0	98.3	69.7	52.2	45.0	42.7	42.5	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	39.7	33.4	33.4	33.4	31.1	31.1
	Score	640	640	629	446	334	288	273	272	262	262	262	262	262	262	262	262	262	262	262	254	214	214	214	1.99	199
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Aau79862 Human cys Aau79856 Human cys Aaw78260 Fragment		Aae04432 Mouse ces Aaw78258 Fragment Aae02405 Human cys	Human Human	Human	Add37980 Human sec Add46706 Human Pro	Human Human	Aaw78259 Fragment Aae04315 Alternati	Aau76555 Human Zcy Abg75917 Human cys
AAU79862 AAU79856 AAW78260	AAE02403	AAE04432 AAW78258 AAE02405	AAE04434 ADA57231	ADA41112 ADC74335	ADD37980 ADD46706	ADD46710 AAU79858	AAW78259 AAE04315	AAU76555 ABG75917
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29.5	2000	2 2 2 2 9 9 2 6 6	2 2 9 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	29.5	29.5	29.5	28.8	27.7
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ALIGNMENTS

Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation; antigenic fragment. Human cystatin-8 (Zcys8) antigenic fragment #2. AAU79854 standard; protein; 117 AA. (first entry) 15-JUL-2002 AAU79854; RESULT 1

Homo sapiens.

WO200220567-A2.

14-MAR-2002.

29-AUG-2001; 2001WO-US026868.

01-SEP-2000; 2000US-0230230P.

(ZYMO) ZYMOGENETICS INC.

Bishop PD; Holloway JL, Gao Z,

WPI; 2002-383044/41.

Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.

Claim 2; Page 94-95; 100pp; English.

polypeptide (1) (1) is useful for: inhibiting cancer proceediant protein in an individual and thus inhibiting cancer proceediant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm motility and fertilisation; and as antigenic peptides to generate antibodies Zcy8s is useful as research reagent for characterising sites of interaction between Zcy8s and its receptor. Zcy8s is useful in enhancing fertilisation during assisted reproduction in humans and in animals. Anti-(1) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcy88. The antibodies are also useful to isolate large The invention describes an isolated mammalian cystatin-8 (Zcys8)

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                                                                                                                                                                                                                                                                                                                                                  13 EVMAVENYAKDSLOWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQ 72
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                                                                                                                                                                                                                                                                                                                         46; Indels 10; Gaps
Ikegawa S., Nakamura Y.,
"DD72, a novel mouse gene implicated in the early stage of ectopic
ossification.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
                                                                                       Query Match
17.9%; Score 112.5; DB 11; Length 146;
Best Local Similarity 26.1%; Pred. No. 0.00027;
Matches 23; Conservative 20; Mismatches 38; Indels 7;
                                                                                                                                                                                                                                                                                               Length 148;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TISSUE-Mammary gland;
Strausberg R.;
Submitted (APR-2002) to the EMBL/GenBank/DDBJ databases.
Submitted (APR-2002) to the EMBL/GenBank/DDBJ databases.
EMBL; BCQ27680; AAH27680.1;
CQ; GO:0004869; F:cysteine protease inhibitor activity; IEA.
InterPro; IPRO00010; Cystatin.
Pfam; PPRO0031; cystatin; 1.
NON TER
SEQÜENCE 146 AA; 16380 MW; 9D77BB9A6063A5C4 CRC64;
                                       Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
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Last annotation update)
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                                                               SEQUENCE FROM N.A.
STRAIN=FVB/N; TISSUE=Salivary gland;
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Best Local Similarity 28.24
Matches 29; Conservative
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Search completed: March 18, 2004, 14:21:23 Job time : 70.9087 secs

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Mus musculus (Mouse)
                                                                  SEQUENCE FROM N.A.
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SEQUENCE FROM N.A.
                                          WCBI_TaxID=10090;
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                                                                                                                                                Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN=CS7; TISSUE=Testis;
Li Y., Friel P.J., Griswold M.D.;
"Molecular cloning and characterization of cystatin SC and cystatin
TE-1, new members of the cystatin family.";
Submitted (OCT-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; AF440735; AAL30841.1; -
                                                                                                                                                                                                                                                                                                                                                               8030411F24RIK.
Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Musinae; Mus
annotation of a full-length mouse cDNA collection.";
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                                                                                                                                                                                                                   66 MOWITCOKPETT - - NCVPOERELHKOVNCFFSVFAVPWFEOYKILNKSC 112
                                                                                                                                                                                                                                66 MQWTTCQKPETT -- NCVPQERELHKQVNCFFSVFAVPWFEQYKILNKSC 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MGD; MGI:1925859; 8030411F24Rik.
GO; GO:0004869; F:cysteine protease inhibitor activity; IEA.
InterPro; IPR00010; Cystatin.
Pfam; PF00031; cystatin; 1.
SEQUENCE 130 AA; 14947 MW; DD2F930B64B4E584 CRC64;
                                                                                                                           Length 130;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19.2%; Score 121; DB 11; Length 130; 27.5%; Pred. No. 2.9e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MGD; MGI:19258859; 8030411F24Rik.
GO; GO:0004869; F:cysteine protease inhibitor activity; IEA.
InterPro; IPR000010; Cystatin.
SPfam; PF00031; Cystatin; 1.
SMART; SM00043; CY; 1.
                                                                                                                                                45; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      45; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         130 AA; 15076 MW; DD34930B64AFE58F CRC64;
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01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
1700006F03Rik protein (Cystatin TE-1).
                                                                                                                                                                                                                                                                                                                                 Last sequence update)
Last annotation update)
                                                                                                                        Query Match
19.2%; Score 121; DB 11;
Best Local Similarity 27.5%; Pred. No. 2.9e-05;
Matches 30; Conservative 28; Mismatches 45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; Pred. No. 2.9e
28; Mismatches
                                                                                                                                                                                                                                                                                                                        Created)
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                      EMBL; AK020193; BAB32024.1; -.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity 27.5
                                                                                                                                                                                                                                                                                                PRELIMINARY;
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           Nature 409:685-690(2001
                                 HSSP; P01034; 1G96.
                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=10090;
 "Functional
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q9DAN8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                          RESULT 12
Q8VII3
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ID Q9
AC Q9
DT 01
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CREATURE-57BL/63; TISSUE-Testis;

KRAING-57BL/64; TISSUE-Testis;

KRAING-57BL/64; TISSUE-Testis;

KRAING-57BL/64; TISSUE-Testis;

KRAING-57BL/64; TISSUE-TESTIS;

KRAING-57BL/64; TISSUE-TESTIS;

A Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,

A Arawa T., Hara A., Kiyosawa H., Kondo S., Yamanaka I.,

A Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,

Radto T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,

Radota K., Matsuda H.A., Ashburner M., Batalov S., Casvant T.,

Radota K., Matsuda H.A., Ashburner M., Batalov S., Cochiwa H.,

Rochiml D., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,

Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,

Baka J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,

Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,

Rochonstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,

Rochonstein M.J., Bult C., Retcher C., Fujita M., Gariboldi M.,

Rosani H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,

Suzuki H., Toyo-oka K., Wang K.H., Weitz C., Whittaker C., Wilming L.,

Whymshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,

Whymshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      24 SLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK--PETTNCVP 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    36 SVEHVVFHFNENQDDDFAYKFLRVRRSLRQKYT-LKYLVDLEMGRTLCGKYDEDIDNCPL 94
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STRAIN=C57; TISSUE=Testis;
Li Y., Friel P.J., Griswold M.D.;
Li Y., Friel P.J., Griswold M.D.;
Molecular cloning and characterization of cystatin SC and cystatin TE-1, new members of the cystatin family.";
Submitted (OCT-2001) to the EMBL/GenBank/DDBJ databases.
1700006F03RIK.
Mus musculus (Mouse).
Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hayashizaki Y.; "Hayashizaki Y.; "Functional annotation of a full-length mouse cDNA collection.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 11; Length 128;
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GO; GO:0004869; F:cysteine protease inhibitor activity; IEA.
InterPro; IPR000010; Cystatin.
Pfram; PR00031; cystatin; 1.
SEQUENCE 128 AA; 15036 MW; 40AFD00103E55ED6 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-OCT-2000 (TrEMBLrel. 15, Last sequence update) 01-JUN-2003 (TrEMBLrel. 24, Last annotation update) DD72 protein (Similar to cystatin 10) (Chondrocytes)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18.2%; Score 114.5; DB 1.
29.7%; Pred. No. 0.00014;
tive 20; Mismatches 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          82 QERELHKQVNCFFSVFAVPWFEQYKILNKSC 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | | :: | | : | :: | | :: | OEGPGERKVRCTYIVETEAWVTKFTILNSTC 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       148 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-0CT-2000 (TrEMBLrel. 15, Created)
01-0CT-2000 (TrEMBLrel. 15, Last seqn
01-JUN-2003 (TrEMBLrel. 24, Last anno
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EMBL; AF440737; AAL30843.1;
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Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13 EEGVQDALKFAVAEFNKASNDMYIHRVSKVVKVQKQVVAGIKYIVTVQMGRTSCRKGGAE 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18 ENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK---P 74
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                36; Indels 10; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bai J., Lao H., Ye X., Li Y., Lou J.;
"Molecular cloning and sequence analysis of cystatin cDNA from two species of sturgeons."; submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; AP34611; AAK16732.1; -.
HSSP; P01038; 1A90.
                                                                      Bai J., Lao H., Ye X., Li Y., Lou J.;
"Molecular cloning and sequence analysis of cystatin cDNA from two species of sturgeons.";
Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; AF334610; AAKI6731.1; -...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Actinopterygii; Chondrostei; Acipenseriformes; Acipenseridae;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 112;
                                                                                                                                                                                                                                GO; GO: 0004869; F: cysteine protease inhibitor activity; IEA. (GO; GO: 0004869; F: cysteine. Pfam. PF00011; cystatin. 1. Pfam. PF00011; cystatin; 1. PF05ITE; PS00287; CXSTATIN; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GO; GO:0004869; F:cysteine protease inhibitor activity; IEA. InterPro; IPR00010; Cystatin. Pfam; PF00031; cystatin; 1. PROSITE; PS00287; CYSTATIN; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     22.1%; Score 139; DB 13; Length 11. 32.0%; Pred. No. 2.9e-07; ive 24; Mismatches 36; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               75 ETTNC----VPQERELHKQVNCFFSVFAVPWFEQYKILNKSCS 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              75 ETTNC----VPQERELHKQVNCFFSVFAVPWFEQYKILNKSCS 113
                                                                                                                                                                                                                                                                                                                                                                                                         112 AA; 12231 MW; 48ECEBFED8A08C00 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     112 AA; 12231 MW; 48ECEBFED8A08C00 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (TrEMBLrel. 17, Last sequence update) (TrEMBLrel. 24, Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Acipenser schrenckii (Amur sturgeon).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity 32.0%
les 33; Conservative
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Best Local Similarity
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                         SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-JUN-2001
01-JUN-2003
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SEOUENCE
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0988R3
10 0988R3
10 0988
DT 01-J
DT 0
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RESULT 10

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SEQUENCE FROM N.A.

RATAIN-C57BL/6J; TISSUE-Embryonic testis;

RADINE-21085660; DubMed-11217851;

RADINE-21085660; DubMed-11217851;

RADINE-21085660; DubMed-11217851;

RA Arawa Y., Hara A., Shibata K., Yoshino M., Itoh M., Ishii Y.,

RADINE-2108560; PubMed-11217851;

RADINE-2108560; PubMed-11217851;

RADINE-2108560; RADINE R., Kiyosawa H., Kondo S., Yamanaka I.,

RADINE-2108560; RADINE R., Riyosawa T., Saito R.,

RADINE-2108560; RADINE R., RADINER T., RADINA H.,

RADINE-2108560; RADINA H., Batalov S., Casavant T.,

RADINE-2108560; RADINA H., RADINA H.,

RADINE-2108560; RADINA H., RADINA H.,

RADINE-2108560; RADINA H., RADINA H.,

RADINA R., RADINA H., RADINA H., RADINA H.,

RADINA R., BOIT C., Fletcher C., Rujita M., Gariboldi M.,

ROMINIONE P., Marchionni L., Mashima J., Machana I., Kamiya M., Lee N.H.,

Lyons P., Marchionni L., Mashima J., Mazamelli J., Mombaerts P.,

RADING-2108560; RADINA R., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,

RADINA RADINA R., Yoshida K., Hasegawa Y., Kawaji H., Kohteuki S.,

Hayashizaki Y.,

Hayashizaki Y.,
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                                                                                                                                                                                                                                                 Rattus norvegicus (Rat).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Rattus.
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STRAIN-Sprague-Dawley; TISSUE-Testis;
Li Y., Friel P.J., Griswold M.D.;
Molecular Cloning and characterization of cystatin SC and cystatin
TE-1, new members of the cystatin family.";
Submitted (OCT-2001) to the EMBL/GenBank/DDBJ databases.
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
NCBI_TaxID=10090;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     79 MGRIICKKHDENIHNCPLLQGSGEKKVHCVFQVDARPWFSHFTVLTSTC 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19.4%; Score 122; DB 11; Length 130; 27.5%; Pred. No. 2.3e-05; ive 28; Mismatches 45; Indels
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Last annotation update)
                                                                                                                             01-MAR-2002 (TrEMBLrel. 20, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
    130 AA.
                                                                                    Created)
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                                                                                    20,
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Matches 30; Conservative
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PRELIMINARY;
                                                                                01-MAR-2002 (TrEMBLrel.
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8030411F24RIK.
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                                                                                                                                                                                                             Cystatin SC.
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01-JUN-2003 (TrEMBLrel. 24, 01-JUN-2003 (TrEMBLrel. 24, 01-OCT-2003 (TrEMBLrel. 25,
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Q98SR4
AACOOCO OO DILIA BAADA B
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MEDLINE=21010502; PubMed=11144350;
MEDLINE=21010502; PubMed=11144350;
Gage F.H.;
"FGF-2-Responsive neural stem cell proliferation requires CCg, a novel autocrine/paracrine cofactor.";
Med. 28:385-397(2000).
EMBL; AF311741; AAG40283.1; -.
HSSP; P01034; 1G96.
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Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
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                                                                                                                                                                                                                                                                                                                                                                                                                               3,
                                                                                                                                                                                                                                                                                                                                                        29.8%; Score 187.5; DB 11; Length 141; 39.6%; Pred. No. 2.3e-12; ive 20; Mismatches 35; Indels 3;
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                    Submitted (Wik-2003) to the EMBL/GenBank/DDBJ databases.

EMBL; BC046661; AAH48691.1; -.

GO; GO:0004669; F:cyteine protease inhibitor activity; IEA.

InterPro; IPR003243; Cystatin.

InterPro; IPR003243; Cystatin.

Pfam; PF00011; cystatin.C/M.

Probon; PD0001231; Cystatin.C/M; 1.

SEQUENCE 141 AA; 16825 MW; C20FA0DBA884951F CRC64;
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InterPro; IPR000010; Cystatin.
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Last sequence update)
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SMART; SM00043; CY; 1.
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Matches 38; Conservative
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01-MAR-2001 (TrEMBLrel.
01-JUN-2003 (TrEMBLrel.
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Matches 35; Conserv
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Strausberg R.;
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TISSUEENCE FROM N.A.

TISSUE=21388257; PubMed=12477932;

A trausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,

A trausberg R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,

Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

A popkins R.F., Jordan H., Moore T., Max S.I., Wang J., Heish F.,

Biatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

Branstein M.J., Usdin T.B., Tooshiyuki S., Carninci P., Frange C.,

Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,

Brownstein M.J., McKernan K.J., Malke J.A., Gunarane P.H.,

Robak S.A., McEwan P.J., McKernan S., Carcia A.M., Gay L.J., Hulyk S.W.,

A llalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,

Richards S., Worley K.C., Hale S., Garcia A.M., Rodrigues S., Sanchez A.,

Whiting M., Madan A., Young A.C., Shevchenko Y., Boutfard G.G.,

Mhiting M., Madan A., Young A.C., Shevchenko Y., Boutfard G.G.,

A Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,

Krzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E.,

T. "Generation and initial analysis of more than 15,000 full-length human and man and manger an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13 EVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQ 72
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Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
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Acipenser ginenser Ghinese sturgeon).
Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Actinopterygii, Chondrostei, Acipenseriformes, Acipenseridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             э,
Э,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tch 23.8%; Score 149.5; DB 11; Length 140; al Similarity 30.4%; Pred. No. 2.7e-08; 31; Conservative 27; Mismatches 41; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; BC048646; AAH48646.1; -.
GO; GO:0004869; F:cysteine protease inhibitor activity; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
TISSUE=Testicle;
Strausberg R.;
Submitted (MAR-2003) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     73 KPET--INCVPQERELHKOVNCFFSVFAVPWFEQYKILNKSC 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SMART; SN00043; CY; 1.
SEQUENCE 140 AA; 16199 MW; 32633E99C4697DAO CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-JUN-2001 (TrEMBLrel. 17, Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
                                     Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      112 AA.
Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro, IPR000010; Cystatin.
InterPro, IPR003243; Cystatin C/M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam; PF00031; cystatin; 1.
ProDom; PD001231; Cystatin_C/M; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDNA sequences.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                      Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Acipenser.
NCBI_TaxID=61970;
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ä

140 AA

PRT;

PRELIMINARY;

Q80Y72

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PRELIMINARY;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
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                                           O9DAP1
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Q80ZN5
                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               24 YQVKRKTFIRVEBVNALESSVKETLEYVTEBYNKKSBDLYNFRILRILKIEKQMTNHMEF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 YQARKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 YQARKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                24 YQARKKTFLSVHEVMAVENYAKDSLQWIIDQYNKESDDKYHFRIFRVLKVQRQ-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61 HLNVEMQWTTCQKPETTNCVPQERELHKQVNCFFSVFAVPWFEQYKILNKSCSSD 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----OVNCFFSVFAVPWFEQYKILNKSCSSD 103
                                                                                                                                                                                                                          SEQUENCE FROM N.A.
Hamil K.G., Liu Q., Zhang Y.-L., French F.S., Hall S.H.;
Hamil K.G., Liu Q., Zhang Y.-L., French F.S., Hall S.H.;
Schlä: A novel epididymal specific member of the cystatin family.";
Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.
EMBL, AF33441, AAT1992.1;
EMBL, AF33441, AAT1992.1;
InterPro; IPR000010; Cystatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 HINVEMOWITCOKPETINCVPOERELHKOVNCPFSVPAVPWFEQYKILNKSCSS 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 35;
                                                                                                                                                                                                                                                                                                                                                                                                                                    63.7%; Score 400.5; DB 4; Length 103; 69.6%; Pred. No. 2.2e-35; ive 0; Mismatches 0; Indels 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN-Springer The Company of the C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 139;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23; Indels
                                                                                                                                                                                                                                                                                                                                                                                             12285 MW; 05DD92C47387B022 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Last sequence update)
Last annotation update)
                                                            Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 360; DB 11;
Pred. No. 6.8e-31;
103 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       139 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              33; Mismatches
                                           Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       57.2%;
                                         20,
20,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-OCT-2002 (TrEMBLrel. 22, 01-OCT-2002 (TrEMBLrel. 22, 01-JUN-2003 (TrEMBLrel. 24,
                                                                                                                                                                                                                                                                                                                                                                         Pfam; PF00031; cystatin; 1.
SEQUENCE 103 AA; 12285 N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              58; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 80; Conservative
PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                         (TrEMBLrel.
                                                                                01-JUN-2003 (TrEMBLrel.
                                                            (TrEMBLrel.
                                                                                                                         Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=10116;
                                                                                                                                                                                   NCBI_TaxID=9606;
                                      01-MAR-2002
01-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Cystatin 11.
CST11.
                                                                                                     SC13delta.
                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
OBWXUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q8K5A3
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 3
Q8K5A3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
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RESULT 4

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REGUENCE FROM N.A.

REQUENCE FROM N.A.

REQUENCE FROM N.A.

REALINE=2108560; PubMed=11217851;

RA Arakawa T., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,

RA Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,

RA Arakawa T., Para A., Pukunishi Y., Konno H., Rondo S., Yamanaka I.,

RA Aito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,

RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,

RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,

RA Kuchl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,

RA Kuchl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,

RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,

RA Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.P.,

RA Blake J., Boffelli D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,

RA Brownstein M.J., Bullt C., Fletcher C., Fujita M., Garibldi M.,

RA Lyons P., Marchionni L., Mashima J., Manazarelli J., Monbaerts P.,

RA Sasaki H., Saro K., Schoch M., Rodriguez I., Sakamoto N.,

RA Sasaki H., Saro K., Schoch K.H., Weitz C., Whittaker C., Wilming L.,

RA Suzuki H., Toyo-oka K., Wang K.H., Weitz C., Whittaker C., Wilming L.,

RA Hashalazaki Y.,

RA Hashalazaki Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          43 YVQHALWYAMKEYNKASNDLYNFRVVDILKSQEQITDSLEYYLEVNIARTMCKKVAGDNE 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20 YAKDSLOWITDOYNKESDDKYHFRIFRVLKVQRQVTDHLBYHLNVEMQWTTCQK--PETT 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mús musculus (Mouse).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi;
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus.
                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'Functional annotation of a full-length mouse cDNA collection.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MGD; MGI:1916544; 1700006C19Rik.
GO; GO:0004869; F:cysteine protease inhibitor activity; IEA.
InterPro; IPR000010; Cystatin.
Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29.8%; Score 187.5; DB 11; Length
39.6%; Pred. No. 2.3e-12;
tive 20; Mismatches 35; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        141 AA; 16811 MW; C20FA0D8B1AC378C CRC64;
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Last annotation update)
                              Last sequence update)
Last annotation update)
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Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nature 409:685-690(2001).
EMBL; AK005665; BAB24175:1; -.
HSSP; P01038; ICEW.
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                                                         (TrEMBLrel. 24,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 29.8'
Best Local Similarity 39.6'
Matches 38; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                 (TrEMBLrel.
                                                                                           1700006C19Rik protein.
                                                                                                                                                              Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A. TISSUE=Testicle;
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GenCore version 5.1.6
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OM protein - protein search, using sw model

March 18, 2004, 14:05:55 ; Search time 68.9087 Seconds (without alignments) 526.560 Million cell updates/sec Run on:

Title: Perfect score:

US-09-941-314-3 629 1 YQARKKTFLSVHEVMAVENY.....VFAVPWFEQYKILNKSCSSD 115 Sequence:

Scoring table:

1017041 segs, 315518202 residues BLOSUM62 Gapop 10.0 , Gapext 0.5 Searched:

1017041 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database

SPTREMBL_25:*

1: sp_archea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_mammal:*
5: sp_mammal:*
7: sp_mcsnelle:*
7: sp_phage:*
7: sp_plant:*
7: sp_plant:*
7: sp_vodent:*
7: sp_v

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

sp_bacteriap:* sp_archeap:*

	Description	Q8wxu6 homo sapien	Q8wxu5 homo sapien	Q8k5a3 rattus norv	Q9dap1 mus musculu	Q80zn5 mus musculu	Q9epx9 musculu	Q80y72 mus musculu	Q98sr4 acipenser s	Q98sr3 acipenser s	Q8vih8 rattus norv	Q9cx46 mus musculu	Q8vii3 mus musculu	Q9dan8 mus musculu	Q9jm84 mus musculu	Q8k397 mus musculu	Q8vhc1 rattus norv
SUMMARIES	ΙD	Овихие	QBWXUS	Q8K5A3	Q9DAP1	Q80ZNS	Q9EPX9	Q80Y72	Q98SR4	Q98SR3	овитив	Q9CX46	QBVII3	Q9DAN8	Q9JM84	Q8K397	Q8VHC1
	DB	4	4	11	11	11	11	11	13	13	11	11	11	11	11	11	1
	f Query Match Length DB	138	103	139	141	141	140	140	112	112	130	130	130	128	148	146	149
d	Query Match	100.0	63.7	57.2	29.8	29.8	26.5	23.8	22.1	22.1	19.4	19.2	19.2	18.2	18.0	17.9	17.9
	Score	629	400.5	360	187.5	187.5	166.5	149.5	139	139	122	121	121	114.5	113	112.5	112.5
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Q9d1b1 mus musculu Q724j8 homo sapien Q81fu5 brachydanio Q8jfu5 brachydanio Q9dw15 mus musculu Q9tw5 onchocerca O16159 brugia mala Q9hb95 litomosoide Q9ds brugia mala Q9hb95 litomosoide Q9ds brugia mala Q1700 debaryomyce Q17108 acanthochei Q9u9al onchocerca Q8mb6 ixodes scap O16454 caenorhabdi Q8ibf4 plasmodium Q8sk4 macaca fasc Q8dy macaca fasc Q9dy macaca fasc Q0dy macaca fas	
Q9D1B1 Q7Z4J8 Q8VII2 Q8VII2 Q8VII5 Q9VI65 Q9D264 Q9D264 Q9D260 Q9D260 Q12700 Q11708 Q9U9A1 Q8NVB6 Q815X0 Q8	
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18 ENYAKDSLOWITDOYNKESDDXYHFRIFRVLKVOROVTDHLEYHLNVEMQWITCOK--PE 75
                                                                                                                                                                                                                         MEDLINE=97054523; PubMed=8898820; Wei L.H., Walker L.C., Levy E.; Wei L.H., Walker L.C., Levy E.; "Cystatin C. Icelandic-like mutation in an animal model of cerebrovascular beta-amyloidosis."; Stroke 27:2080-2085(1996).

-I-FUNCTION: As an inhibitor of cysteine proteinases, this protein is thought to serve an important physiological role as a local regulator of this enzyme activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                  Macaca mulatta (Rhesus macaque).
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Primates; Catarrhini; Cercopithecidae;
Cercopithecinae; Macaca.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            myloid; Signal.
BY SIMILARITY.
CYSTATIN C.
REACTIVE SITE.
SECONDARY AREA OF CONTACT.
BY SIMILARITY.
BY SIMILARITY.
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              15-JUL-1998 (Rel. 36, Created)
15-JUL-1998 (Rel. 36, Last sequence update)
15-BFBB-2003 (Rel. 41, Last annotation update)
Cystatin C precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR000010; Cystatin.
Pfam; PF00031; Cystatin; 1.
SMART; SM00043; CY; 1.
PROSITE; PS00287; CYSTAIN; 1.
Thiol protease inhibitor; Amyloic SIGNAL
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Best Local Similarity
Matches 34; Conserva
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Search completed: March 18, 2004, 14:16:08 Job time : 14.6905 secs

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Oliver K., Parker A., Patel R., Pearce T.A.V., Peck A.I., Printimore B.J.C.T., Prathalingam S.R., Plumb R.W., Rammay H., Rice C.M., Ross M.T., Socter C.E., Sehra H.K., Shownkeen R., Sins S., Skuce C.D., Smith M.L., Socterlund C., Steward C.A., Suleron J.E., Swann R.M., Sycamore N., Taylor R., Tee L., Thomas D.W., Thorpe A., Tracey A., Tromans A.C., Vaudin M., Wallia, J.M., Whitchead S.L., Whittaker P., Willey D.L., Williams L., Williams S.A., Wilming L., Wray P.W., Hubbard T., Durbin R.M., Bentley D.R., Beck S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Protein inhibitors of cysteine proteinases. III. Amino-acid sequence of cystatin from chicken egg white.";
Hoppe-Seyler's Z. Physiol. Chem. 364:1487-1496(1983).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Srubb A., Loefberg H., Barrett A.J.;
"The disulphide bridges of human cystatin C (gamma-trace) and chicken
                                                                                                                           "The DNA sequence and comparative analysis of human chromosome 20."; Nature 414:865-871(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE OF 27-76.
MEDLINE=84128015; PubMed=6365094;
Brzin J., Popovic T., Turk V.;
Human cystatin, a new protein inhibitor of cysteine proteinases.";
Biochem. Biophys. Res. Commun. 118:103-109(1984).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=84110059; Pubmed=6662498;
Turk V., Brzin J., Longer M., Ritonja A., Eropkin M., Borchart U.,
Machleidt W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Human gamma-Trace, a basic microprotein: amino acid sequence and presence in the adenohypophysis."; Proc. Natl. Acad. Sci. U.S.A. 79:3024-3027(1982).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Human cystatin C, an amyloidogenic protein, dimerizes through three-dimensional domain swapping."; Nat. Struct. Biol. 8:316-320(2001).
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Abrahamson M., Jaskolski M.;
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                                                                                                                                                                                                 MEDLINE=22388257; Pubmed=12477932;
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MEDLINE=82222268; Pubmed=6283552;
Grubb A., Loefberg H.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=92316504; PubMed=1352269;
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DISULFIDE BONDS.
Grubb A., Loefbe
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                                                                                                                 Rogers J.;
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                                                                                                                               -1- SUBUNIT: Homodimer.
-1- TISSUE SPECIFICITY: Expressed in highest levels in the epididymis.
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                                                                                                                                                              vas deferens, brain, thymus, and ovary and the lowest in the ububandibular gland.

DISBASE: Defects in CST3 are.a cause of hereditary cerebral hemorrhage with amyloidosis (HCHWA) [MIM:105150]; also known as cerebral amyloid angiopathy (CAA) or cerebracherial amyloidosis cerebral type. HCHWA is characterized by a thickening of the cerebral arteries walls with deposition of material with the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                            Hum. Genet. 89:377-380(1992).
-!- FUNCTION: As an inhibitor of cysteine proteinases, this protein thought to serve an important physiological role as a local regulator of this enzyme activity.
Abrahamson M., Jonsdottir S., Olafsson I., Jensson O., Grubb A.; "Hereditary cystethin C amyloid angiopathy: identification of the disease-causing mutation and specific diagnosis by polymerase chain reaction based analysis.";
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Thiol procease inhibitor; Amyloid; Signal; Disease mutation; Polymorphism; 3D-structure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Match 24.6%; Score 155; DB 1; Length 146; Local Similarity 33.7%; Pred. No. 5.1e-09; les 34; Conservative 21; Mismatches 42; Indels
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REACTIVE SITE.
SECONDARY AREA OF CONTACT.
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M27890; AAA52164.1; JOINED.
K61681; CAA438856.2; ...
K61682; CAA43866.2; JOINED.
K61683; CAA43866.2; JOINED.
                                                                                                                                                                                                                                                                                characteristics of amyloid.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; X05607; CAA29096.1; -.
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SMART; SM00043; CY; 1.
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PDB; 1G96; 06-APR-01.
Genew; HGNC:2475; CST3.
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MIM; 105150;
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Beasley O.P., Barlow N.F., Bearde N.M., Bearde N.M., Brown A.J., Beasley O.P., Barloy V.B., Barloy S.E., Bridgeman A.M., Brown A.J., Buck D., Burrill W.D., Butler A.P., Carder C., Carter N.P., Charman J.C., Clamp M., Clark G., Clark S.Y., Clee C.M., Clegg S., Cobley V.E., Collier R.E., Connor R.E., Corby N.R., A. Clegg S., Cobley V.E., Collier R.E., Connor R.E., Dunn M., Bington A., Crankland D.A., Fraser A., French L., Garrner P., A. Bington A.G., Frankland J.A., Fraser A., Honden D., Garffeiths C., Grifffiths M.N.D., Gwilliam R., Hall R.E., Hammond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J., Hammond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J., Hammond S., Harley J.L., McConnachie L.J., McLay K., McMurray A., Laird G.K., Lawlor S., Lehvaeslaiho M.H., Leversha M.A., Lloyd C., Lloyd D.M., Lovell J.D., Marsh V.L., Martin S.L., McConnachie L.J., McLay K., McMurray A.A., Milles N.A., Mistry D., McCornachie L.J., McLay K., McMurray A., A., Millimson D., Santh M.L., Scott C.E., Sehra H.K., Shownkeen R., Sims S., Swann R.M., Sycamore N., Taylor R., Thomas D.W., Thorpe A., Syann R.M., Sycamore N., Taylor R., Taracy A., Tromans A.C., Vaudin M., Walla M., Walliams L., Williams S.A., Wiltehead S.L., Wiltehead S.L., Wiltehead S.L., Wilthers P., Williams L., Williams L., Willing D.L., Williams R.M., Bentley D.R., Beck S., Williams L., Will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lsb-sib.ch).
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N-LINKED (GLCNAC..
N-LINKED (GLCNAC...
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-!- SUBCELLULAR LOCATION: Secreted (Potential).
-!- SIMILARITY: Belongs to the cystatin family.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genew; HGNC:15958; CSTL1.
InterPro; IPR000010; Cystatin.
PROSITE; PS00287; CYSTATIN; FALSE_NEG.
Thiol protease inhibitor; Signal.
SIGNAL 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N-LINKED
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151 1
165 AA;
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MEDLINE=21658749; PubMed=11780052;
MEDLINE=21658749; PubMed=11780052;
Deloukas P., Matthews L.H., Ashurst J., Burton J., Gilbert J.G.R.,
Jones M., Stavrides G., Almeida J.P., Babbage A.K., Bagguley C.L.,
A Jones M., Barlow K.F., Bates K.N., Beard L.M., Beard D.M.,
Basley O.P., Bird C.P., Blakey S.E., Bridgeman A.M., Brown A.J.,
Buck D., Burrill W.D., Butler A.P., Carder N.P.,
Chapman J.C., Clamp M., Clark G., Clark L.N., Clark S.Y., Clee C.M.,
Coulson A., Coville G.J., Deadman R., Dhami P.D., Dunn M.,
Coulson A., Coville G.J., Praser A., Freech L., Garner P.,
A Hammond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J.,
Huckle E., Hunt A.R., Hunt S.E., Jekosch K., Johnson C.M., Johnson C.M., Johnson C.M., Lavalor S.,
Lehvaeslaiho M.H., Leversha M.A., Lloyd C., Lloyd D.M., Lovell J.D.,
Marsh V.L., Martin S.L., McConnachie L.J., McLay K., Michiray A.A.,
Milne S.A., Mistry D., Moore M.J.F., Mullikin J.C., Nickerson T.,
              TISSUE-Leukocyte;
MEDLINE-90303202; PubMed=2363674;
Abrahamson M., Olafsson I., Palsdottir A., Ulvsbaeck M., Lundwall A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Levy E., Lopez-Otin C., Ghiso J., Geltner D., Frangione B., "Stroke in Icelandic patients with hereditary amyloid angiopathy is related to a mutation in the cystatin C gene, an inhibitor of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Dickinson D.P., Hewett-Emmett D., Thiesse M.; "Acquisition of complex patterns of differential expression in epithelial cell populations during the evolution of type 2 cystatin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Saitch E., Sabatini L.M., Eddy R.L., Shows T.B., Azen B.A., Isemura S., Sanada K.; The human cystatin C gene (CST3) as member of the cystatin gene family which is localized on chromosome 20."; Biochem. Biophys. Res. Commun. 162:1324-1331(1989).
                                                                                                                                                                                                                                                                                          Abrahamson M., Grubb A., Olafsson I., Lundwall A.; "Molecular cloning and sequence analysis of cDNA coding for the precursor of the human cysteine proteinase inhibitor cystatin C.";
                                                                                                                                                                                                                                                                                                                                                                                                                                              Jensson O., Grubb A.; "Structure and expression of the human cystatin C gene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (NOV-2000) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A. (HCHWA VARIANT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TISSUE=Brain;
MEDLINE=89235594; PubMed=2541223;
                                                                                                                                                                                                                                                                            MEDLINE=87219149; PubMed=3495457;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=89350949; PubMed=2764935;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Exp. Med. 169:1771-1778(1989)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Biochem. J. 268:287-294(1990).
                                                                                                                                                                                                                                                                                                                                             'EBS Lett. 216:229-233(1987)
                                                                                                                                                                                                                                         FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cysteine proteases."
                                                                                                                                                                                                                                                                                                                                                                             FROM N.A.
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                                                                                                                                                                                                           NCBI_TaxID=9606;
                                                                                                                                                                                                                                         SEQUENCE
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CYTC_HUMAN
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28-FEB-2003 (Rel. 41, Last annotation update)
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146
37
85
109
                   Cystatin C precursor.
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nes 35; Conserv
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                                                                                                          NCBI_TaxID=9521;
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Matches
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                                                                                                                                                                                                                                                   MEDLINE-89076505; PubMed=3202964;
MEDLINE-89076505; PubMed=3202964;
Saitoh E., Isemura S., Sanada K., Kim H.-S., Smithies O., Maeda N.;
Saitoh E., Isemura S., Sanada K., Kim H.-S., Smithies O., Maeda N.;
"Cystatin superfamily. Evidence that family II cystatin genes are
evolutionarily related to family III cystatin genes.";
Biol. Chem. Hoppe-Seyler 369:191-197 (1988).
-!- FUNCTION: Thiol protease inhibitor.
-!- SUBCELIULAR LOCATION: Secreted.
-!- SIMILARITY: Belongs to the cystatin family.
"Characterization and amino acid sequence of a new acidic cysteine proteinase inhibitor (cystatin SA) structurally closely related to cystatin S, from human whole saliva.";
J. Biochem. 102:693-704 (1987).
                                                                                                      Isemura S., Saitoh E., Sanada K., Isemura M., Ito S.;
"Characterization and amino acid sequence of a new acidic cysteine proteinase inhibitor (cystatin SA) structurally closely related to cystatin S, from human whole saliva.";
(In) Turk V. (eds.);
Cysteine proteinases and their inhibitors, pp.497-505,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             25.5%; Score 160.5; DB 1; Length 141; 31.5%; Pred. No. 1.3e-09; ive 24; Mismatches 36; Indels 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GO; GO:0004869; F:cysteine protease inhibitor activity; TAS. InterPro; IPR000010; Cystatin. Pfam, PF00031; cystatin; 1. SMART: SM00043; CY; 1. PROSITE; PS00287; CYSTATIN; 1.
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REACTIVE SITE.
SECONDARY AREA OF CONTACT.
BY SIMILARITY.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             82 QER-ELHKQVNCFFSVFAVPWFEQYKILNKSC 112
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(Rel. 36, Last sequence update)
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EMBL; M19671; AAA36116.1; JOINED.
EMBL; M19672; AAA36116.1; JOINED.
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PIR; B29632; B29632.
HSSP; P01034; 1G96.
Genew; HGNC;2474; CST2.
MIM; 123856;
                                                                                         SEQUENCE OF 25-141.
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ID CYTC SAISC
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DT 15-JUL-1998
DT 15-JUL-1998
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15-JUL-1998
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RATER REPRESENTATION OF THE PROPERTY OF THE PR

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                46 EEGVRRALDFAVSEYNKASNDMYHSRALQVVRARKQIVAGVNYFLDVEMGRTTCTKNQPN 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18 ENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK--PE 75
                                                                                                                                           SEQUENCE FROM N.A.
MEDLINE-97054523; PubMed-8898820;
MEDLINE-97054523; PubMed-8898820;
Mei L.H., Walker L.C., Levy E.
"Cystatin C. Icelandic-1ke mutation in an animal model of
"Cystatin C. Icelandic-1ke mutation.";
Cerebrovascular beta-amyloidosis.";
Stroke 27:2080-2085(1996).
-I-FUNCTION: As an inhibitor of cysteine proteinases, this protein is
thought to serve an important physiological role as a local
regulator of this enzyme activity.
Saimiri sciureus (Common squirrel monkey).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Platyrrhini; Cebidae; Cebinae; Saimiri.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDIINE=21638749; PubMed=11780052;
Deloukas P., Matthews L.H., Ashurst J., Burton J., Gilbert J.G.R.,
Jones M., Stavrides G., Almeida J.P., Babbage A.K., Bagguley C.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4 ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    25.4%; Score 160; DB 1; Length 146; ilarity 34.7%; Pred. No. 1.6e-09; Conservative 21; Mismatches 41; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BY SIMILARITY.
CYSTATIN C.
EXEACTIVE SITE.
SECONDARY AREA OF CONTACT.
BY SIMILARITY.
BY SIMILARITY.
W, 08196353C0306AA3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    76 TINCVPOER-ELHKQVNCFFSVFAVPWFEQYKILNKSCSSD 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      106 LDNCPFHEQPHLKRKAFCSFQIYSVPW-QGIMTLSKSTCQD 145

    -!- SIMILARITY: Belongs to the cystatin family.

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28-FEB-2003 (Rel. 41, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Cystatin-like 1 precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 165 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Thiol protease inhibitor; Amyloid; Signal. SIGNAL 1 26 BY SIMITABET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HSSP; P01034; 1G96.
InterPro; IPR000010; Cystatin.
Pfam; PF00031; Cystatin; 1.
SMART; SM00043; CY: 1.
PROSITE; PS00287; CYSTATIN; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                143 B)
15946 MW;
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EVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQ
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                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bloinformatics and the EMBL outstation-the European Bloinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                   SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
MEDLINE=21363810; PubMed=11471062;
MEDLINE=21363810; PubMed=11471062;
Bringer M.A., Thompson J., Conroy O., Xu Y., Yang F., Canniff J.,
Beeson M., Gordon L., Bennett B., Johnson T.E., Sikela J.M.;
High-throughput sequence identification of gene coding variants within alcohol-related GTLs.";
Mamm. Genome 12:657-663(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       25.5%; Score 160.5; DB 1; Length 140;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CYSTATIN C.
REACTIVE SITE.
SECONDARY AREA OF CONTACT.
BY SIMILARITY.
BY SIMILARITY.
A -> G (IN REF. 1).
L -> F (IN REF. 1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15531 MW; 3A563406DD58D0F5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SMART; SM00043; CY; 1.
TROSITE; PS00287; CYSTATIN; 1.
Thiol protease inhibitor; Signal.
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; AF483486; AAL90760.1; -. EMBL; AF483487; AAL90761.1; -. EMBL; BC002072; AAH02072.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PIR; A36163; A36163.
HSSP; P01034; 1G96.
MGD; MGI:102519; Cgt3.
InterPro; IPR000010; Cystatin.
Pfam; PF00031; cystatin; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; M59470; AAA63298.1; -. EMBL; U10098; AAB41056.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            140
31
103
137
16
 Gene 152:221-226(1995)
                                                                                                              SEQUENCE FROM N.A.
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ACT SITE
SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CONFLICT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
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Gaps

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Indele

Pred. No. 1.3e-09 24; Mismatches

32.4%;

Best Local Similarity 32.4 Matches 34; Conservative

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SECURACE FROM N.A.

SECURACE FROM N.A.

REDIGNES-21658749; PubMed=11780052;

REDIGNES-21658749; PubMed=11780052;

REDIGNES-21658749; PubMed=11780052;

REDIGNES-21658749; PubMed=11780052;

REDIGNES-21658749; PubMed=11780052;

REDIGNES M., Starvindes G., Almeida J.P., Babbage A.K., Bagguley C.L.,

REDIGNES M., Starvindes G., Balkey S.E., Bridgeman A.M., Brown A.J.,

REDIGNES M., Collier A.B., Carder C., Carter N.B.,

Coulson A., Coville G.J., Deadman R., Dhami P.D., Dunn M.,

RELLINGTON A.G., Frankland J.A., Fraser A., French L., Garner P.,

RELLINGTON A.G., Frankland J.A., Fraser A., French L., Garner P.,

RELLINGTON A.G., Frankland J.A., Fraser A., Johnson D.,

A Grafham D.V., Griffiths C., Griffiths M.N.D., Gwilliam R., Hall R.E.,

RAM A.B., Hunt A.R., Hunt S.E., Jekosch K., Johnson D.,

RAM M.P., Kimberley A.M., King A., Knights A., Laird G.K., Lawlor S.,

Lehvaeslaiho M.H., Leversha M.A., Lloyd C., Lloyd D.M., Lovell J.D.,

A Milne S.A., Mistry D., Mocormachie L.J., McLay K., McKurray A.A.,

AN Milne S.A., Mistry D., Mocormachie L.J., Willikin J.C., Nickerson T.,

A Nickerson B.J.C.T., Prathalingam S.R., Plunb R.W., Ramasy H.,

Swann R.M., Sycamore N., Taylor R., Tee L., Thomas D.,

Swann R.M., Sycamore N., Taylor R., Tee L., Thomas D.,

Swann R.M., Sycamore N., Taylor R., Tee L., Thomas D.,

Swann R.M., Sycamore N., Taylor R., Tee L., Thomas D.,

Swann R.M., Sycamore N., Taylor R., Tee L., Thomas D.,

Swann R.M., Sycamore N., Taylor R., Tee L., Thomas D.,

Swann R.M., Sycamore N., Taylor R., Tee L., Thomas D.,

Swann R.M., Sycamore N., Taylor R., Tee L., Thomas D.,

Swann R.M., Sycamore N., Walliey D.L., Whilliams L., Williams S.A.,

Milling D., Whitehead S.L., Whitteker P., Willey D.L., Williams L., Williams S.A.,

Milling D., Well R., Bentley D.R., Williams S.A.,

Milling B., Walley D., Williey D.L., Williams L., Williams S.A.,

Milling R., Walley D., Williams L., Williams S.A.,

Milling B., Walley B., Williams L., Williams J.,

Milling B., Walley B.,

Milling B., Willing B.,

Milling B., Willing B.,

Mil
35 EADANBEGVRRALDFAVSEYNKGSNDAYHSRAIQVVRARKQLVAGVNYFLDVEMGRTTCT 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Isemura S., Saitoh E., Sanada K., Minakata K.; Isemura S., Saitoh E., Sanada K., Minakata K.; (S-type) cystatins "Identification of full-sized forms of ealivery (S-type) cystatin SN, cystatin S, and two phosphorylated forms of cystatin S) in human whole saliva and determination of phosphorylation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     comparative analysis of human chromosome 20.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDIINE=88185836; PubMed=3446578; Saitoh E., Kim H.-S., Smithles O., Maeda N.; Saitoh E., Kim H.-S., Smithles O., Handan cysteine-proteinae inhibitors: nucleotide sequence analysis of three members of the cystatin gene family.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Butheria, Primates, Catarrhini, Hominidae, Homo.
                                                                               73 KPET -- INC-VPQERELHKQVNCFFSVFAVPWFEQYKILNKSCSS 114
                                                                                                              01-WAR-1989 (Rel. 10, Created)
01-MAR-1989 (Rel. 10, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Cystatin SA precursor (Cystatin S5).
                                                                                                                                                                                                                                                                          141 AA
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MEDLINE=92138674; PubMed=1778989;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE OF 25-141.
MEDLINE=88139220; PubMed=3436950;
Isemura S., Saitoh E., Sanada K.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Biochem. 110:648-654(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "The DNA sequence and co
Nature 414:865-871(2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gene 61:329-338(1987).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                             P09228; Q9UCQ7;
                                                                                                                                                                                                                                                                       CYTT_HUMAN
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24 SLOWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK--PETTNC-V 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      24 ALQFAMAEYNKASNDKYSSRVVRIISAKQQLVSGIKYIMEVBIGRTTCPKSSADLQSCEF 83
             Coturnix coturnix japonica (Japanese quail).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
                                                                                                                                                                                                                                                                                    -!- FUNCTION: This protein binds tightly to and inhibits papain and cathepsin B.
-!- SIMILARITY: Belongs to the cystatin family.
-!- SIMILARITY: Belongs to the cystatin family.
InterPro; IPR000010; Cystatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
STRAIN=129/Sv; TISSUB=Liver;
MEDLINE=95137392; PubMed=7835704;
MEDLINE=95137392; PubMed=7835704;
MEDLINE=95137392; PubMed=7835704;
MEDLINE=9513792; PubMed=7835704;
"Structural organization, expression and chromosomal mapping of the mouse cystatin-C-encoding gene (Cst3).";
                                                                                                                                                                              Gerhartz B., Engh R.A., Mentele R., Eckerskorn C., Torquato R., Wittman J., Kolb H.J., Machleidt W., Fritz H., Auerswald E.A.; "Quail cystatin: isolation and characterisation of a new member of the cystatin family and its hypothetical interaction with cathepsin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN=BALB/c; TISSUE-Brain;
MEDLINE-91054522; PubMed=2241983;
Solem M., Rawson C., Lindburg K., Barnes D.;
"Transforming growth factor beta regulates cystatin C in serum-free mouse embryo (SFME) cells.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus.
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             REACTIVE SITE.
SECONDARY AREA OF CONTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PHOSPHORYLATION.
48248621053A2F70 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 26.9%; Score 169.5; DB 1; Best Local Similarity 35.9%; Pred. No. 1.3e-10; Matches 33; Conservative 21; Mismatches 35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Biochem. Biophys. Res. Commun. 172:945-951(1990)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          81 POERELHKOVNCFFSVFAVPWFEOYKILNKSC 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               84 HDEPEMAKYTTCNFVVYSIPWLNQIKLLKSSC 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-FEB-1996 (Rel. 33, Last sequence update) 10-OCT-2003 (Rel. 42, Last annotation update) Cystatin C precursor (Cystatin 3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          140 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                          Thiol protease inhibitor, Phosphorylation.
ACT_SITE 9 9 REACTIVE SITE
                                                                                                                          SEQUENCE.
TISSUE=Egg white;
MEDLINE=97420480; PubMed=9276465;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              57 SEC
81
115
80 PHC
13093 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-MAY-1991 (Rel. 18, Created)
01-FEB-1996 (Rel. 33, Last seq
10-OCT-2003 (Rel. 42, Last anno
                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
PROSITE; PS00287; CYSTATIN; 1.
Cystatin (Egg-white cystatin)
                                                                                                                                                                                                                                                                       FEBS Lett. 412:551-558(1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       116 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                        NCBI_TaxID=93934;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CYTC MOUSE P21460;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOD RES
SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DISULFID
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                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      24 SLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKP--ETTNC-V 80
                                                                     recombinant unphosphorylated variant in solution.";
J. Mol. Biol. 234:1048-1059(1993).
-!- FUNCTION: This protein binds ightly to and inhibits a variety of thiol proteases including ficin, papain, and cathepsins B, C, H, and L. Although isolated from egg white, it is also present in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                 Dieckmann T., Mitschang L., Hofmann M., Kos J., Turk V.,
Auerswald E.A., Jeanicke R., Oschkinat H.;
"The structures of native phosphorylated chicken cystatin and of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PROSITE; PS00287; CYSTATIN; 1.
Thiol protease inhibitor; Phosphorylation; Signal; 3D-structure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27.1%; Score 170.5; DB 1; Length 139; 37.0%; Pred. No. 1.2e-10; tive 19; Mismatches 36; Indels 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REACTIVE SITE.
SECONDARY AREA OF CONTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PHOSPHORYLATION (PARTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15287 MW; D92D1131C4D37891 CRC64;
                                                                                                                                                                                -!- SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        81 PQERELHKQVNCFFSVFAVPWFEQYKILNKSC 112
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(Rel. 36, Last sequence update)
(Rel. 41, Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
 MEDLINE=94087719; PubMed=8263912;
                                                                                                                                                                                                                                                                                                                                                                                                       PDB; ICEW; 31-JAN-94.
PDB; IA67; 27-MAY-98.
PDB; IA90; 17-JUN-98.
InterPro; IPR000010; Cystatin.
Pfam; PP00011; cystatin; 1.
SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                       EMBL; J05077; AAA48744.1; -
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139 AA;
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15-JUL-1998
28-FEB-2003
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CYT_COTJA
ID _ CYT_COTJA
AC P81061;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                    Cole T., Dickson P.W., Esnard F., Averill F., Risbridger G., Gauthher F., Schreiber G., Gauthher F., Schreiber G., "The cDNA structure and expression analysis of the genes for the cysteine proteinase inhibitor cystatin C and for beta 2-microglobulin
                                                                                                                                                                     NEQUENCE OF 8-127.
MEDLINE=90380276; PubMed=2400577;
Esnard F., Esnard A., Faucher D., Capony J.-P., Derancourt J.,
Brillard M., Gauthier F.;
"Rat cystatin C: the complete amino acid sequence reveals a site for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cysteine proteinases, this protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sertoli cella.";
FEBS Lett. 300:111-135(1992).
-!- FUNCTION: As an inhibitor of cysteine proteinases, this protein thought to serve an important physiological role as a local regulator of this enzyme activity. Known to inhibits cathepsin
                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=92225121; PubMed=1563513;
Esnard A., Esnard F., Guillou F., Gauthier F.;
"Production of the cysteine proteinase inhibitor cystatin C by rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27.3%; Score 171.5; DB 1; Length 127;
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REACTIVE SITE.
SECONDARY AREA OF CONTACT.
BY SIMILARITY.
BY SIMILARITY.
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78F70158B7925853 CRC64;
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                                                                                                                                                                                                                                                                                           SEQUENCE OF 8-49.
MEDLINE-88313020; PubMed=3044831;
Esnard A., Banard F., Faucher D., Gauthier F.;
"Two rat homologues of human cystatin C.";
FEBS Lett. 236:475-478(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -!- SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A -> E (IN REF.
                                                                                                                                                                                                                                                 N-glycosylation.";
Biol. Chem. Hoppe-Seyler 371:161-166(1990)
                                         STRAIN=Buffalo;
MEDLINE=90092122; PubMed=2689174;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Thiol protease inhibitor; Signal. NON TER 1
                                                                                                                                              Eur. J. Biochem. 186:35-42(1989)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HSSP, P01034; 1G96.
InterPro; IRRO0010; Cystatin.
Pfam, PF00031; Cystatin; 1.
SMART; SM00043; CY; 1.
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PIR; S10587; S10587.
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62
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127 AA;
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             [1]
SEQUENCE FROM N.A.
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PROSITE; PS00287;
NCBI_TaxID=10116;
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                                                                                                                                in rat brain.
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72 81

43; Indels

Conservative

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22 BADASEGUQRALDPAVSEYNKGSNDAYHSRAIQVVRARKQIVAGINYYLDVEMGRTTCT 13 EVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQ

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21-JUL-1986 (Rel. 01, Created)
01-0CT-1989 (Rel. 12, Last sequence update)
01-0CT-1989 (Rel. 12, Last sequence update)
28-FBB-2003 (Rel. 41, Last annotation update)
Cystatin precursor (Egg-white cystatin).
Gallus gallus (Chicken).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'Protein inhibitors of cysteine proteinases. III. Amino-acid sequence
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                                                                                                                                                                                                                                                                                                                                              MEDLINE=90008873; PubMed=2793849;
Colella R., Sakaguchi Y., Nagase H., Bird J.W.C.;
"Chicken egg white cystatin. Molecular cloning, nucleotide sequence, and tissue distribution.";
J. Biol. Chem. 264:17164-17169(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=83256421; PubMed=6409085; Anastasi A., Brown M.A., Kembhavi A.A., Nicklin M.J.H., Sayers C.A., Sunter D.C., Barrett A.J.; "Cysteatin, a protein inhibitor of cysteine proteinasse. Improved purification from egg white, characterization, and detection in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Brzin J., Kos J., Turk V.;
"The 2.0 A X-ray crystal structure of chicken egg white cystatin and
its possible mode of interaction with cysteine proteinases.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDIINE=84178305; PubMed=6712597; Schwabe C., Anastasi A., Crow H., McDonald J.K., Barrett A.J.; "Cystatin. Amino acid sequence and possible secondary structure.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE-89252033; PubMed=2721673;
Laber B., Krieglstein K., Henschen A., Kos J., Turk V., Huber R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Turk V., Brzin J., Longer M., Ritonja A., Bropkin M., Borchart Machleidt W.;
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MEDLINE-89052676; PubMed=3191914;
Bode W., Engh R., Musil D., Thiele U., Huber R., Karshikov A.,
                73 KPET--TNC-VPQERELHKQVNCFFSVFAVPWFEQYKILNKSCSS 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cysteine proteinase inhibitor chicken cystatin is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of cystatin from chicken egg white.";
Hoppe-Seyler's Z. Physiol. Chem. 364:1487-1496(1983)
                                                                                                                       139 AA
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                                                                                                                       PRT;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Biochem. J. 217:813-817(1984)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      phosphoprotein.";
FEBS Lett. 248:162-168(1989).
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                                                                                                                       STANDARD;
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                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                NCBI_TaxID=9031;
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Chapman J.C., Clamp M., Clark G., Clark L.N., Clark S.Y., Clee C.M., Clegg S., Cobley V.E., Collier R.E., Connor R.E., Corby N.R., Covilson A., Covilled G.J., Deadman R., Dhanmi P.D., Dunn M., Covilled G.J., Deadman R., Dhanmi P.D., Dunn M., Erakland J.A., Fraeer A., French L., Garner P., Ra Ellington A.G., Harley J.L., Heath P.D., Gwilliam R., Hall R.E., Ramond S., Harley J.L., Heath P.D., Hos., Holsen P.J., Ramond S., Harley J.L., Heath P.D., Gwilliam R., Hall R.E., Ray M.P., Kimberley A.M., Kingh R., Johnson D., Ray M.P., Kimberley A.M., Kingh R., Johnson C.M., Johnson D., Ray M.P., Kimberley A.M., Kingh R., Lloyd C., Lloyd D.M., Lovell J.D., Anthon M.J., McConnachie L.J., McLay K., McMurray A.R., Lehvacelaiho M.H., Leversha M.A., Lloyd C., Lloyd D.M., Lovell J.D., Anthon M.J. R., Millikin J.C., Nickerson T., Ransh V.L., Marthy D., Moore M.J.F., Mullikkin J.C., Nickerson T., Ransh V.L., Scott C.E., Sehra H.K., Shownkeen R., Sime S., Skuce C.D., Smith M.L., Soderlund C., Steward C.A., Sulston J.E., Swann R. M., Sycamore N., Traylor R., Thompe A., Trocey A., Tromans A.C., Vaudin M., Walliam S.L., Williams L., Williams E., Williams L., Williams
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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TISSUE SPECIFICITY: Proximal caput region of the epididymis. Lower expression in the testis. Within the testis it is localized to the elongating spermatids, whereas within the epididymis it is exclusively synthesized by the proximal caput epithelium. SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CYSTATIN-RELATED EPIDIDYMAL SPERMATOGENIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nature 414:865-871(2001).
-!- FUNCTION: Performs a specialized role during sperm development and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
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N-LINKED (GLCNAC. . .) (POTENTIAL)
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GO, GO:0004869; P:cysteine protease inhibitor activity; TAS.
InterPro; IPR000010; Cystatin.
Pfam; PR00031; cystatin; 1.
SMART; SM00043; CY; 1.
Thiol protease inhibitor; Signal; Polymorphism.
SIGNAL
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95
119
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CARBOHYD
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"The DN
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isp-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11 VHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                               an improved
                                                                                                                                                                          Eukaryota; Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi;
Mammalia, Eutheria, Lagomorpha, Leporidae, Oryctolagus.
                                                                                                                                                                                                                                                                                                                                                                          "Large scale isolation of osteoclast-specific genes by an improve
method involving the preparation of a subtracted cDNA library.";
Genes Cells 3:459-475(1998).
-!- FUNCTION: This is a thiol proteinase inhibitor.
-!- SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'n.
                                                                                                                                                                                                                                                                                                                       Kobori M., Ikeda Y., Nara H., Kato M., Kumegawa M., Nojima H.,
Kawashima H.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 1; Length 148;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTKTQTNLANCPFHDQPDLQRKMLCSFEIYSVPWLNKISLLKSDCQN 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     71 COKPET -- TNC-VPQERELHKQVNCFFSVFAVPWFEQYKILNKSCSS 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CYSTATIN C.
REACTIVE SITE.
SECONDARY AREA OF CONTACT.
BY SIMILARITY.
BY SIMILARITY.
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01-APR-1990 (Rel. 14, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
CSystatin C precursor (Fragment)
                                       16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
148 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                127 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27.7%; Score 174.5; 30.8%; Pred. No. 5.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Thiol protease inhibitor; Signal. Transt. 1 28 POTENTIAL.
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                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
STRAIN-Japanese white; TISSUE-Bone;
MEDLINE-98424349; PubMed-9753427;
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148 CY
39 RE
87 SE
111 BY
16346 MW;
                                                                                                                                                   Oryctolagus cuniculus (Rabbit).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  33; Conservative
STANDARD;
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                                                                                                         Cystatin C precursor.
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83
101
125
148 AA;
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RABIT
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cystatin-related epididymal spermatogenic gene.";
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         142 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HSSP; P01034; 1G96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity
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                                                                                              maturation.
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O60676;
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DISULFID
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CST8 HUMAN
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Matches
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DDT ACCOOR DDE DDT ACCOOR DD ACCO
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                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         83
                     SUBCELLUTAR LOCATION: Secreted.

TISSUE SPECIFICITY: Proximal caput region of the epididymis. Lower expression in the testis. Within the festis it is localized to the elongating spermatids, whereas within the epididymis it is exclusively synthesized by the proximal caput epithelium.

INDOCTION: Testicular factors or hormones other than androgens present in the testicular fluid may be involved in the regulation of CRES gene expression.

SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CYSTATIN-RELATED EPIDIDYMAL SPERMATOGENIC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60 YHLNVEMOWITCOKP -- ETINCVPOER-ELHKOVNCFFSVFAVPWFEQYKILNKSC 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84 YQIDVQISRSNCKKPLNNTENCIPQKKPELEKKASCSFLVGALPWNGEFNLLSKEC 139
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTRDEQVGESQK (IN REF. 2)
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae, Rattus.
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MEDINE=99247899; PubMed=10229662;
Cornwall G.A., Haia N., Sutton H.G.;
"Structure, alternative splicing and chromosomal localization of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SECONDARY AREA OF CONTACT (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N-LINKED (GLCNAC. . .) (POTENTIAL)
N-LINKED (GLCNAC. . .) (POTENTIAL)
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50B446E98F66673E CRC64;
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30-MAY-2000 (Rel. 39, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
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BY SIMILARITY
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Thiol protease inhibitor; Signal.
SIGNAL 1 19 POTENTIAL
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16288 MW;
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InterPro; IPR000010; Cystatin.
Pfam; PF00031; cystatin; 1.
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37.1%;
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HSSP; P01034; 1G96.
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1119
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CSTB_RAT
DD 088959;
DT 30-MAY-200
DT 10-OCT-200
DE CYStatin-r
DD 8).
CYStatin-r
GN CST8 OR CR
CSTR OR CR
OC MAMMALIA;
OC MAMMALIA;
OC MAMMALIA;
CO MAMMA
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CARBOHYD
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CYSTATIN-RELATED EPIDIDYMAL SPERMATOGENIC
SPROTEIN
SECONDARY AREA OF CONTACT (POTENTIAL).
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
A'LINKED (GLCNAC. . ) (POTENTIAL).
Biochem. J. 340:85-93(1999).
-!- FUNCTION: Performs a specialized role during sperm development and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | : || | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | : | | : | : | | : | : | | : | : | | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : :
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30-MAY-2000 (Rel. 39, Last sequence update)
28-FEB-2013 (Rel. 41, Last annotation update)
Cystratin-related epididymal spermatogenic protein precursor (Cystatin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
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Deloukas P., Matthews L.H., Ashurst J., Burton J., Gilbert J.G.R., Jones M., Stavrides G., Almeida J.P., Babbage A.K., Bagguley C.L., Bailey J., Barlow K.F., Bates K.N., Beard L.M., Beare D.M., Beasley O.P., Bird C.P., Blakey S.E., Bridgeman A.M., Brown A.J., Buck D., Burrill W.D., Butler A.P., Carder C., Carter N.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cornwall G.A., Hann S.R.; "Transient appearance of CRES protein during spermatogenesis and caput epididymal sperm maturation.";
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105 BY SIMILARITY.
139 BY SIMILARITY.
100 N-LINKED (GLCMAC. . .) (POTENTIAL)
16246 MW, FB873FAA6B6CAB34 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          31.6%; Score 199; DB 1; Length 142; 35.7%; Pred. No. 1.5e-13; ive 26; Mismatches 36; Indels
                                                                                                                                                                                                 -!- SUBCELLULAR LOCATION: Secreted (By similarity).
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Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
Thiol protease inhibitor; Signal.
SIGNAL
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MOUSE
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CST8_MOUSE
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Matches
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SEQUENCE FROM N.A.

SEQUENCE TRON N.A.

REALIN=C57BL/6J; TISSUE=Epididymis;

MEDLINE=21085660; DubMed=11211851;

REMAIN J., Shinagawa A., Shibata K., Yoshino M., Itch M., Ishii Y.,

Rawai J., Shinagawa A., Shibata K., Yoshino H., Adachi J., Fukuda S.,

Alzawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,

Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,

Radota K., Matsuda H.A., Ashburner M., Batalov S., Casvant T.,

Radota K., Matsuda H.A., Ashburner M., Batalov S., Casvant T.,

Radota K., Matsuda H.P., Suzuki R., Pesole G., Quackenbush J.,

Rehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,

Rochim L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,

Bake J., Boffelli D., Bojunga N., Carninci P., de Bonado M.F.,

Brownstein M.J., Bult C., Fletcher C., Pujita M., Gariboldi M.,

Brownstein M.J., Bult C., Fletcher C., Pujita M., Gariboldi M.,

Brownstein M.J., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,

Nordone P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,

Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,

Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,

Whymbaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,

Wanshi, S., V.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
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BY SIMILARITY.

N-LINKED (GLCNAC. .) (POTENTIAL)

Missing (in isoform 2).
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INCENTO; IPROMOMO10; Cyetatin.
Pfam; PF00031; Cystatin; 1.
SMART, SMO0043; CY; 1.
PROSITE; PS00287; CY: 1.
PROSITE; PS00287; CY: 1.
ZS POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C585C8C39A585C3B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.0%; Score 629; DB 1;
100.0%; Pred. No. 1.5e-57;
iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Missing (in isofo/FTId=VSP_001260
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28-FEB-2003 (Rel. 41, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
Cystatin 11 precursor.
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Matches 115; Conservative
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101
134
131
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        26
93
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131
76
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Q9D269;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mol. Endocrinol. 6:1653-1664(1992).
-!- FUNCTION: Performs a specialized role during sperm development and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cystatin-related epididymal spermatogenic protein precursor (Cystatin-related epididymal spermatogenic protein precursor (Cystatin-CSTS OR CRES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 YOARKKIFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            24 YQVKKYTFIRIBEVSALESSVKETLEYVTDEYNKKSEDLYNFRILRILKIMKQVTGHLEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cornwall G.A., Haia N., Sutton H.G., "Structure, alternative splicing and chromosomal localization of the cystatin-related epididymal spermatogenic gene."; Blochom. J. 340:85-93(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CONTACT (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61 HLNVEMQWTTCQKPETTNCVPQERELHKQVNCFFSVFAVPWFEQYKILNKSCS 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
NCBI _TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (POTENTIAL)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            59.1%; Score 372; DB 1; Length 139; larity 54.9%; Pred. No. 3e-31; Conservative 29; Mismatches 22; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                     139 CYSTATIN 11.
80 SECONDARY AREA OF CONTACT
102 BY SIMILARITY.
135 BY SIMILARITY.
135 BY LINKED (GLCNAC. . .) (PC
16217 MW, F228D9815FA32640 CRC64;
               -- SUBCELLUTAR LOCATION: Secreted (Potential).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              142 AA
                                                                                                                                                                                                                                                                                                                                                                                                        Thiolipic transfer inhibitor; Signal.
                                                                                                                                                                                                                                                                                               MGD, MGI:1925490; Cetll.
InterPro; IPR000010; Cystatin.
Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
PROSITE; PS00287; CYSTATIN; FALSE_NEG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
STRAIN=C3H, and CD-1;
MEDLINE=99247899; PubMed=10229662;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TISSUE=Epididymis;
MEDLINE=93078799; PubMed=1280328;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P32766; 089102;
01-0CT-1993 (Rel. 27, Created)
30-MAY-2000 (Rel. 39, last earn
28-FBB-2003 (Rel. 41, Last ann
                                                                                                                                                                                                                                                        EMBL; AK020300; BAB32061.1; -. HSSP; P01034; 1G96.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE OF 4-142 FROM N.A.
Nature 409:685-690(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
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les 62; Conserv
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GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
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OM protein - protein search, using sw model

March 18, 2004, 14:02:50 ; Search time 13.6905 Seconds (without alignments) 437.389 Million cell updates/sec Run on:

US-09-941-314-3 629 1 YQARKKTFLSVHEVMAVENY.....VFAVPWFEQYKILNKSCSSD 115 Title: Perfect score:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table: Sequence:

141681 segs, 52070155 residues Searched:

Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

SwissProt_42:* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

		d				
Result		Query				
No.	Score	Match	Length	8	OI.	Description
г	629		137	-	CS11 HUMAN	Q9h112 homo sapien
~	372		139	ч	CS11_MOUSE	m snm 6
m	214	34.0	142	-	CST8_MOUSE	P32766 mus musculu
4	199	31	142	ч	CST8 RAT	O88969 rattus norv
	188.5	8	142	ч	CST8 HUMAN	O60676 homo sapien
9	174.5	27	148	-	CYTC_RABIT	097862 oryctolagus
7		7.	127	٦	CYTC_RAT	P14841 rattus norv
œ	70.		139	ч	CYT CHICK	8
σ	169.5	26.9	116	٦	CYT_COTJA	P81061 coturnix co
10	60.	5.	140	-	CYTC MOUSE	
11	160.5	25.5	141	٦	CYTT HUMAN	8
12	160	25.4	146	٦	CYTC_SAISC	O19093 Baimiri sci
13	157.5	25.0	165	-	CSTL_HUMAN	Q9h114 homo sapien
14	155	4	146	Н	CYTC_HUMAN	homo
15	ın	24.6	146	٦	CYTC MACMU	macac
16	153.5	4.	148	-	CYTC_BOVIN	
17	146.5		141	-	CYTS_HUMAN	
18	143		129	-	CYT_CYPCA	cypri
19	139.5	22.2	141	7		homo
20	135	21.5	147	-		
21	130.5	20.7	142	-	CYTD HUMAN	homo
22	129.5		141	Н	CYTS RAT	3 rattu
23	127		111	٦	CYT_BITAR	P08935 bitis ariet
24	127	•	130	ч	CYT_ONCMY	ouco
25	127		137	-	CST9_MOUSE	Q9z0h6 mus musculu
56	126	20.0	130	Н	CYT ONCKE	Q98967 oncorhynchu
27	121.5		149	н	CYTM HUMAN	homo
28	0	•	145	Н		6 homo
29	98.5	15.7	434	-		7 bos t
30	٠		619	-		5 boa
31	98	15.6	144	-		
32	96.5	15.3	436	-		046 bos 1
33	Ġ	15.3	621	-	KNH1 BOVIN	P01044 bos taurus

P22085 onchocerca	P01042 homo sapien	P08934 rattus norv	Q87rl6 vibrio para	P08932 rattus norv	P01048 rattus norv	008677 mus musculu	074232 kluyveromyc	P44689 haemophilus	Q7mmw8 vibrio vuln	Q06430 homo sapien	P29717 candida alb	
CYTX_ONCVO	KNG_HUMAN	KNG RAT	SYE_VIBPA	KNTZ RAT	KNT1 RAT	KNG MOUSE	CAPA KLULA	MESJ_HAEIN	SYE VIBVY	BGIE HUMAN	EXG_CANAL	
-	Н	-	Н	-	Н	Н	Н	Н	Н	н	Н	
162	644	639	474	430	430	661	214	430	474	400	438	
15.2	14.9	13.8	13.1	12.9	12.6	12.6	12.2	12.2	12.0	11.9	11.7	
95.5	93.5	87	82.5	81	79	79	77	77	75.5	75	73.5	
34	35	36	37	38	39	40	41	42	43	44	45	

ALIGNMENTS

RESULT 1

	821841888888888888888888888888888888888	CSSII HUMAN COSILIE, CORPULLS, COSILIE, COSTILIS, COSILIE, A1, Created) CESTION (Rel. 41, Last sequence update) E CYSTION (Rel. 41, Last sequence update) E CYSTION (SPECIAL) E CYSTION (SPECIAL) E CYSTION CAPPLED-2003 (Rel. 41, Last sequence update) E CYSTION CAPPLED-2004 (Rel. 41, Manual) E MARCHAIL SECTION CAPPLED CAPPLED CAPPLED CAPPLED-2005 (Rel. 41) E MARCHAIL SECTION CAPPLED CAPPLED CAPPLED CAPPLED-2006 (Rel. 41) MARCHAIL SECTION CAPPLED CAPPLED CAPPLED CAPPLED CAPPLED-2006 (Rel. 41) MARCHAIL SECTION CAPPLED CA
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Query Match 20.2%; Score 127; DB 2; Length 111; Best Local Similarity 30.3%; Pred. No. 1.1e-05; Matches 27; Conservative 24; Mismatches 28; Indels 10;
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16 QEAAAFAVEKYNAGSKNDYYFKERRVVEAQSQVVSGVKYYLMMELLKTTCKKTVGRPKGY 75 22 KDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK----a ò

74 PETINC-VPQERELHKQVNCFFSVFAVPW 101

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QEIQNCNLPPENQ-QEEITCRFEVWSRPW 103 92

RESULT 15
JG4918
Cystetin precursor - chum salmon
C;Species: Oncorhynchus keta (chum salmon)
C;Decies: Oncorhynchus keta (chum salmon)
C;Decies: 26-Sep-1996 #sequence_revision 01-Nov-1996 #text_change 21-Jan-2000
C;Accession: JG4918
R;Yamashita, M.; Konagaya, S.
J; Biochem. 120, 483-487, 1996
A;Title: Molecular cloning and gene expression of chum salmon cystatin.
A;Reference number: JG4918
A;Accession: JG4918
A;Accession: JG4918
A;Status: preliminary
A;Nolecule: type: mANA
A;Residues: 1-132 xyAM>
A;Cross-references: DBB;DB6628
A;Experimental source: liver
C;Comment: This protein is a homolog of mammalian cystatin C, and acts as an extracellul
C;Comment: This protein is a homology
C;Superfamily: cystatin; cystatin homology
C;Superfamily: cystatin; homology
C;Reywords: liver
F;1-21/Domain: signal sequence #status predicted <SIG>F;23-132/Domain: cystatin homology <CYS>

Query Match 20.0%; Score 126; DB 2; Length 132; Best Local Similarity 26.3%; Pred. No. 1.6e-05; Matches 25; Conservative 27; Mismatches 41; Indels

22 KDSLOWITDQYNKESDDKYHFRIFRYLKVQRQVTDHLEYHLNVEMQWTTCQK--PETTNC 79

2; Gaps

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80 VPOERELHKOVNCFFSVFAVPWFEQYKILNKSCSS 114

Search completed: March 18, 2004, 14:23:12 Job time: 23.1329 secs

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C; Accession: JQ1470; A31891; S05252; S15132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bedi, G.S.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cystatin D precursor - human
Cispecies: Homo sapiens (man)
CjDate: 03-May-1994 #sequence_revision 03-May-1994 #text_change 16-Jul-1999
CjAccession: A47142; S18212
RjFreije, J.P.; Balbin, M.; Abrahamson, M.; Velasco, G.; Dalboge, H.; Grubb, A.; Lopez-C
A, Biol. Chem. 266, 15737-15744, 1993
A;Title: Human cystatin D. cDNA cloning, characterization of the Escherichia coli expres
A;Reference number: A47142; MUID:93340179; PMID:8340398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A Status: preliminary
A; Molecule type: mRNA
A; Molecule type: mIN B; Molecule type: mingle residue difference between this report and S18218 was investigated and Shote: single residue difference between this report and S18218 was investigated and Shreije, J.P.; Abrahamson, M.; Olafsson, I.; Velasco, G.; Grubb, A.; Lopez-Otin, C.
J. Biol. Chem. 266, 20538-20543, 1991
A; Title: Structure and expression of the gene encoding cystatin D, a novel human cystein
A; Reference number: S18212; MUID: 92041895; PMID: 1939105
The intracellular role of this protein is the inhibition of intralysosomal pd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4.
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17 RDALQFAVVEHNKKTINDMFVRQVAKVVNAQKQVVSGMKYIPTVQMGRIPCRKGGVEKICS 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               84
                                                                                                                                                                                                                                                                                                                                                    22 KDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK--PETTNC 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cystatin S precursor - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 17-Jul-1992 #sequence_revision 17-Jul-1992 #text_change 16-Jul-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AQSRTLAGGIHATDLNDKSVQRALDFAISEYNKVINKDEYYSRPLOVMAAYQQIVGGVNY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ARKKTFL-SVHEVMAVENYAKDSLQWITDQYNKE-SDDKYHFRIFRVLKVQRQVTDHLEY
                                                                                                                                                                                                                                                                                      Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A, Accession: S18212
A, Status: preliminary
A, Molecule type: DNA
A, Residues: 1-45, C', 47-142 <FR2>
A, Cross-references: EMBL:X59964; NID:g30263; PIDN:CAA42590.1; PID:g30264
C, Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              extracellular protein; saliva
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                                                                                                                                                                                                                     21.3%; Score 134; DB 1; Length 111; 27.4%; Pred. No. 2.1e-06;
                                                                                                                                                                                                                                                                                Indels
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A)MD position: 20p1.121-20p11.21
A;Introns: 77/3; 115/3
C;Superfamily: cystatin; cystatin homology
C;Keywords: cysteine proteinase inhibitor; extracellule
F;1-20/Domain: signal sequence #status predicted <SIG>F;30-142/Domain: cystatin homology <CYS>
                                                                                                                                                                                                                                                                                      40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  80 VPQERELHKQVNCFFSVFAVPWFEQYKILNKSCSS 114
                                                                                                                                                                                                                                            27.4%; Pred. .v. tive 27; Mismatches
                             C;Superfamily: cystatin; cystatin homology
C;Keywords: cysteine proteinase inhibitor
F;2-111/Domain: cystatin homology <CYS>
F;89-27/Region: inhibitory
F;89-109/Disulfide bonds: #status experimental
                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                               Best Local Similarity
Matches 26; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Gene: GDB:CST5
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JQ1470
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R;Cox, J.L.; Shaw, P.A.
Gene 110, 175-180, 1992
A;Title: Structure, organization and regulation of a rat cysteine proteinase inhibitor-er
A;Reference number: JQ1470; MUID:92165056; PMID:1537554
                                                                                                                                     A;Accession: JQ1470
A;Molecule type: DNA
A;Residues: 1-141 <COS.
A;Accession: JQ14 < COS.
A;Cose-references: GB:M75281; NID:g294537; PIDN:AAA41068.1; PID:g294538
A;Crose-references: GB:M75281; NID:g294537; PIDN:AAA41068.1; PID:g294538
B;Shaw, P.A.; Cox, J.L.; Barka, T.; Nalto, Y.
J. Biol. Chem. 263, 18133-18137, 1988
A;Fitle: Cloning and sequencing of CDNA encoding a rat salivary cysteine proteinase inhit
A;Reference number: A31891; MUID:89053983; PMID:3263967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Arch. Biochem. Biophys. 273, 245-253, 1989
A;Title: Amino acid sequence of an inducible cysteine proteinase inhibitor (cystatin) fro
A;Reference number: S05252; MUID:89334379; PMID:2757396
A;Accession: S05252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A,Molecule type: protein
A,Residues: 28-113, 'QE',116-141 <BED>
A,Residues: 28-113, 'QE', 116-141 <BED>
A,Note: 87-Glu and 88-His were also found; disulfide bonds determined
R,Nishiuar, T.; Ishibashi, K.; Abe, K.
Biochim. Biophys. Acta 1077, 346-354, I991
A,Fitle: Isolation of three forms of cystatin from submandibular saliva of isoproterenol-A,Reference number: S15132; MUID:91230145; PMID:1903068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Molecule type: protein
;Residues: 29-38;76-80 <BIO>
;Note: forms RSC-1, RSC-2 and RSC-3 with differing amino-terminals were found; a form be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C)Accession: A. 28793

Rikitonja, A.; Evans, H.J.; Machleidt, W.; Barrett, A.J.

Biochem. J. 246, 799-802, 1987

A;Titler and acquence of a cystatin from venom of the African puff adder (Bitis a) A;Reference number: A28793; MUID:88076861; PMID:3500714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>ښ</u>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Aintrons: 76/3; 114/3
CiSuperfamily: oystatin homology
CiSuperfamily: oystatin, cystatin homology
CiSuperfamily: oystatin, cystatin broteins proteins proteins proteins proteins and proteins proteins and proteins proteins are present as a present a cystatin s #status experimental cMAT3-F;29-141/Product: cystatin S, form RSC-3 #status predicted cMAT3-F;31-141/Product: cystatin homology cVS-F;31-41/Product: cystatin S, form RSC-2 #status predicted cMAT2-F;31-141/Product: cystatin S, form RSC-1 #status predicted cMAT1-F;94-104,118-138/Disulfide bonds: #status experimental
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20.6%; Score 129.5; DB 2
31.7%; Pred. No. 7.8e-06;
tive 20; Mismatches 44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Molecule type: mRNA
A;Residues: 'ISTDYLYISFEHETLSC',27-141 <SHA>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Molecule type: protein
A;Residues: 1-111 <RIT>
C;Superfamily: cystatin; cystatin homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C; Species: Bitis arietans (puff adder)
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Best Local Similarity 31.7*
Matches 32; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cystatin - puff adder
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A,Molecule type: DNA
A,Residues: 21-141 <8A2>
R,Saitoh, B.; Kim, H.S.; Smithies, O.; Maeda, N.
A,Title: Human Cysteine-proteinase inhibitors: nucleotide sequence analysis of three memt
A,Reference number: A91589; MUID:88185836; PMID:3446578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Molecule type: DNA
A;Residues: 1-86,'I',88-141 <SAI>
R;Isemura, S.; Satroh, B.; Sanada, K.
R;Isemura, S.; Satroh, B.; Sanada, K.
EBS Lett. 198, 145-149, 198
A;Title: Characterization of a new cysteine proteinase inhibitor of human saliva, cystat:
A;Reference number: A01273; MUID:86164938; PMID:3514272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C.Comment: Human saliva appears to contain several cysteine proteinase inhibitors that an ences. Cystatin SN, with a pI of 7.5, is a much better inhibitor of papain and dipeptidyl
A;Cross-references: GB:J03870; NID:g337751; PIDN:AAA60299.1; PID:g337752
R;Saitch, E.; Isemura, S.; Sanada, K.; Kim, H.S.; Smithies, O.; Maeda, N.
Ball. Chem. Hoppe-Seyler 369, 191-197, 1988
A;Title: Cystatin superfamily. Evidence that family II cystatin genes are evolutionarily A;Reference number: S02489; MUID:89076505; PMID:3202964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: protein
A; Residues: 29-141 <ISB>
R; Ramasubbu, N.; Reddy, M.S.; Bergey, E.J.; Haraszthy, G.G.; Soni, S.D.; Levine, M.J.
Biochem. J. 280, 341-352, 1991
A; Title: Large-scale purification and characterization of the major phosphoproteins and
A; Reference number: S19279; MUID: 92082469; PMID: 1747107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C)Accession: 072040
R;Koide, Y.; Noso, T.
Riscide, Y.; Noso, T.
Biosci. Biotechnol. Biochem. 58, 164-169, 1994
A;Title: The complete amino acid sequence of pituitary cystatin from chum salmon. A;Reference number: JC2040; MUID:94162738; PMID:7764512
A;Accession: 072040
A;Molecule type: protein
A;Residues: 1-111 <KOI>
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NyAlternate names: cysteine proteinase inhibitor
C;Species: Oncorhynchus keta (chum salmon)
C;Date: 14-Jul_1994 #sequence_revision 14-Jul-1994 #text_change 16-Jul-1999
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C;Superfamily: cystatin; cystatin homology
C;Reyords: cystatin; cystatin homology
C;Reyords: cystatin spreetinase inhibitor; extracellular pro
C;Reyords: cystatin SA-I #status experimental <MATI>F;21-141/Product: cystatin SA-I #status experimental <MATI>F;30-141/Product: cystatin SM-#status experimental <MATI>F;30-141/Domain: cystatin homology <CYS>
F;30-141/Domain: inhibitory #status predicted
F;6-80/Region: inhibitory #status predicted
F;94-104,118-138/Disulfide bonds: #status predicted
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Best Local Similarity 29.6%; Pred. No. 7.9e-07;
Matches 29; Conservative 21; Mismatches 45
                                                                                                                                                                                             A;Accession: S02489
A;Status: not compared with conceptual translation
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: protein A; Residues: 21-55 < RAM>
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A;Residues: 21.36 <JOHS
A;Note: sequence extracted from NCBI backbone (NCBIP:67866)
A;Note: authors desigate form without phosphate as cystatin S and form containing one ph
C;Comment: This protein strongly inhibits papain and ficin, partially inhibits stem brom
                                  A; Molecule type: protein
A; Residues: 29-134, 'D', 136-141 <ISE>
A; Residues: 29-134, 'D', 136-141 <ISE>
A; Risemura, S.; Saitoh, E.; Ito, S.; Isemura, M.; Sanada, K.
J. Biochem. 96, 1311-1314, 1984
A; Title: Cystatin S: a cysteine proteinase inhibitor of human saliva.
A; Reference number: A91981; MUID:8104877; PMID:6394600
A; Contents: annotation; inhibitor specific 394600
A; Contents: annotation; inhibitor specific 394600
A; Contents: Biophys. Res. Commun. 145, 1248-1253, 1987
A; Title: Identification of a long form of cystatin from human saliva by rapid microbore A; Reference number: A29603; MUID:87270697; PMID:3496880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: protein
A; Regidues: 21-55 <RAM>
R; Johnsson, M.; Richardson, C.F.; Bergey, E.J.; Levine, M.J.; Nancollas, G.H.
Arch. Oral Biol. 36, 631-636, 1991
A; Title: The effects of human salivary cystatins and statherin on hydroxyapatite crystal
A; Reference number: A56608; MUID:92074898; PMID:1741693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: protein
A; Residues: 21-51 < HAM.
A; Residues: 21-51 < HAM.
A; Residues: 21-51 < HAM.
B; Ramasubbu, N. S., Bergey, E.J.; Haraszthy, G.G.; Soni, S.D.; Levine, M.J.
Biochem. J. 280, 341-352, 1991
A; Title: Large-scale purification and characterization of the major phosphoproteins and A; Reference number: S19279; MUID: 92082469; PMID: 1747107
A; Accession: S19280
A; Status: preliminary
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UDHUP2
Cystatin SN precursor [validated] - human
NyAlternate names: cystatin SA-I
C;Species: Homo sapiens (man)
C;Date: 28-May-1986 #sequence revision 08-Feb-1996 #text_change 08-Dec-2000
C;Accession: A28110; S02499; Ā29512; A01273; S19279
R;Al-Hashimi, I: Dickinson, D.P.; Levine, M.J.
J. Biol. Chem. 263, 9381-9387, 1988
A;Fille: Purification, molecular cloning, and sequencing of salivary cystatin SA-I.
A;Reference number: A28110; MUID:88243825; PMID:2837486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           : : : | : : | | : | | : | : | : | | DEWVQRALHFAISEYNKATEDDYYRRPLQVLRAREQTFGGVNYFFDVEVGRTICTKSQPN 100
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A/Map position: 20p1.2-20p11.2
C.Superfamily: cystatin, cystatin homology
C.Superfamily: cystatin proteinase inhibitor; phosphoprotein; saliva
F;1-20/Domain: signal sequence #status predicted <SIG>
F;21-141/Product: cystatin B #status predicted <MAT>
F;30-141/Domain: cystatin homology <CYS>
F;60-141/Domain: dystatin perdicted
F;64-104,118-138/Disulfide bonds: #status predicted
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les 42;
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A; Residues: 1-141 <ALH>
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Best Local S:
Matches 29
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Gaps ..

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R;Hirado, M.; Tsunasawa, S.; Sakiyama, F.; Niinobe, M.; Fujii, S.
FEBS Lett. 186, 41-45, 1985
A;Title: Complete amino acid sequence of bovine colostrum low-M-r cysteine proteinase int
A;Reference number: A01271; MUID:85231205; PMID:3891407
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C;Species: Homo sapiens (man)
C;Species: Homo sapiens (man)
C;Date: 25-Peb-1985 #sequence revision 08-Feb-1996 #text_change 16-Jul-1999
C;Accesion: S17667; S16500; A01272; A29603; S19280; A56608
R;Bobek, L.A.; Aguirre, A.; Levine, M.J.
Biochem, J. 278, G27-635; J1991
A;Title: Human salivary cystatin S. Cloning, sequence analysis, hybridization in situ and A;Reference number: S17667; MUID:91378918; PMID:1898352
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A; Mesdidues: 1-141 - ABDB.
A; Actedidues: 1-141 - ABDB.
A; Cross-references: EMBL; X54667; NID: 930365; PIDN: CAA38478.1; PID: 930366
R; Lamkin, M.S.; Jensen, J.L.; Setayesh, M.R.; Troxler, R.F.; Oppenheim, F.G.
Rxch: Biochem. Bjodhys. 288, 664-670, 1891
A; Title: Salivary cysterin 8A-1II, a potential precursor of the acquired enamel pellicle, A; Reference number: S16500; MUID: 91378515; PMID: 1898055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Title: Isolation and amino acid sequence of SP-1, an acidic protein of human whole sall A;Reference number: A91985; MUID:85054716; PMID:6501254
                                                                                                                                                                                                                                                                                   46 EEGVRRALDFAVGEYNKASNDMYHSRALQVVRARKQIVAGVNYFLDVELGRTTCTKTQPN 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13 EEGVQEALSFAVSEFNKRSNDAYQSRVVRVVRARKQVVSGMNYFLDVELGRTTCTKSQAN 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N;Alternate names: thiol proteinase inhibitor
C;Species: Bos primigenius taurus (cattle)
C;Date: 28-Feb-1986 #sequence_revision 28-Feb-1986 #text_change 06-Dec-1996
C;Accession: A01271
                                                                                                                                                                                                          18 ENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK--PE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18 ENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPETT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 112;
           Length 146;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              106 LDNCPFHDQPHLKRKAFCSFQIYAVPW-QGTWTLSKSTCQD 145
                                                                                                                                                                                                                                                                                                                                                                                                                                           76 TINC-VPQERELHKOVNCFFSVFAVPWFEQYKILNKSCSSD 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 78 --NC-VPQERELHKQVNCFFSVFAVPWFEQYKILNKSC 112
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C. Superfamily: Oystatin, cystatin homology
C. Keywords: colostrum, cystaine proteinase inhibitor
F.2-112/Domain: cystatin homology cCYS>
F.48-52/Region: inhibitory #status predicted
F.66-76,90-110/Disulfide bonds: #status predicted
24.6%; Score 155; DB 1; ilarity 33.7%; Pred. No. 2.3e-08; Conservative 21; Mismatches 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .4e-08;
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Best Local Similarity 30.6%; Pred. No. 2.4e-
Matches 30; Conservative 23; Mismatches
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A;Molecule type: protein
A;Residues: 21-134,'D',136-141 <IHU>
K;Isemura, S; Saitoh, E; Sanada, K.
J. Biochem. 96, 489-498, 1984
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           Query Match
Best Local Similarity
Matches 34; Conserv
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A/Forduces: precial type: protein
A/Forduces: 27-49;106-146 <BER>
C.Comment: This protein is found in the post-gamma-globulin fraction of cerebrospinal file patients with certain autoimmune diseases.
C.Comment: This protein is an inhibitor of cysteine proteinases and may serve an imported C.Comment: A mutant cystatin C, with 94-Gln, is deposited in hereditary cerebral hermorr C.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Genetics:
A.Gross-references: GDB:119817; OMIM:105150
A.Gross-references: GDB:119817; OMIM:10517; OMIM:10517; OMIM:10517; OMIM:10517; OMIM:
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A; Mesidues: 37-93, 'Q', 93-146, GHI>
A; Mesidues: 37-93, 'Q', 93-146, GHI>
A; Residues: 37-93, 'Q', 93-146, GHI>
A; Residues: 37-93, 'Q', 93-146, GHI>
A; Residues: 37-93, 'Q', 93-146, GHI>
B; Turk, V.; Brzin, J; Longer, M.; Ritonja, A.; Eropkin, M.; Borchart, U.; Machleidt, W. Hoppe-Seyler's Z. Physiol. Chem. 364, 1487-1496, 1983
A; Fitle: Protein inhibitors of cysteine proteinases. III. Amino-acid sequence of cystati A; Federance number: S01461; MUID:84110059; PMID:6662498
A; Molecule type: protein
A; Molecule type: protein
A; Residues: 27-73 - TURK, V.
B; Biochem. Biophys. Res. Commun. 118, 103-109, 1984
A; Title: Human cystatin, a new protein inhibitor of cysteine proteinases.
A; Reference number: A32732; MUID:84128015; PMID:6365094
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A.Residues: 27-49, 'XX', 52-64 < CLA>
A.Rote: this protein, purified from cerebrospinal fluid of patients with the autosomal of defective gene is not present in CFB but is found instead in amyloid deposits
R.Popovic, T.; Brzin, J.; Ritonja, A.; Turk, V.
Biol. Chem. Hoppe-Seyler 371, 575-580, 1990
A.Title: Different forms of human cystatin C.
A.Recession: S10607
A.Molecule type: protein
A.Residues: 27-53 < POP>
A.Rotesidues: 27-53 < POP>
A.Rotesi
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A;Contents: annotation; disulfide bonds
R;Berti, P.U.; Storer, A.C.
Biochem. J. 302, 411-416, 1994
A;Title: Local pH-dependent conformational changes leading to proteolytic susceptibility
A;Reference number: S55305; MUD:94379969; PMID:8092991
A;Accession: S55305
A;Status: preliminary
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                                                                                                                                                                  RiGhiso, J.; Jensson, O.; Frangione, B.
Proc. Natl. Acad. Sci. U.S.A. 83, 2974-2978, 1986
AsiTitle: Amyloid fibrils in heredicary cerebral hemorrhage with amyloidosis of Iceland
A;Reference number: A25434; MUID:86206076; PMID:3517880
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A;Residues: 27-76 - RBRZ-
R;Olafeson, I:; Gudmundsson, G.; Abrahamson, M.; Jensson, O.; Grubb, A.
Scand. J. Clin. Lab. Invest. 50, 85-93, 1990
A;Title: The amino terminal portion of cerebrospinal fluid cystatin C in hereditary
A;Reference number: A60552; MUID:90193615; PMID:2215647
                                                             A;Molecule type: protein
A;Residues: 27-131,'S',133-146 <GRU>
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3

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77

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NiAlternate names: gamma-CSF; gamma-trace; neuroendocrine basic polypeptide; post-gamma CSFpecies: Homo sapiens (man)
CiSpecies: Homo sapiens (man)
CiSpecies: Homo sapiens (man)
CiDate: 06-Jul-1982 #sequence responsible to the construction of the
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A;Molecule type: DNA
A;Residues: 1-24,'T',26-146 <SAI>
A;Cresidues: references: GE:M27889; GB:M27890; GB:M27891; NID:g181385; PIDN:AAA52164.1; PID:g
R;Ghiso, J.; Cowan, N.; Frangione, B.
Biol. Chem. Hoppe-Seyler 369, 205-208, 1988
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A;Cross-references: GB:X61681; NID:g30367; PIDN:CAA43856.2; PID:g4490944
A;Note: the cystatin C gene isolated from the brain of an Icelandic patient with heredit:
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Proc. Natl. Acad. Sci. U.S.A. 79, 3024-3027, 1982
A;Title: Human gamma-trace, a basic microprocein: amino acid sequence and presence in th
A;Reference number: A01270; MUID:82222268; PMID:6283552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          coding for the precursor of the
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A;Title: The human cystatin C gene (CST3) is a member of the cystatin gene family which A;Reference number: A33400; MUID:89350949; PMID:2764935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservation of exon-intron
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                13 EVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQ
                                          A;Cross-references: EMBL:MS9470; NID:g192911; PIDN:AAA63298.1; PID:g192912
C;Superfamily: cystatin; cystatin homology
F:29-140/Domain: cystatin homology <CYS-
F:39-103,117-137/Disulfide bonds: #status predicted
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A;Cross-references: EMBL:X52255; NID:g30257; PIDN:CAA36497.1; PID:g296643
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                                                                                                                                                                                                                                                                                 Length 140;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  95 KSQINLIDCPFHDQPHLMRKALCSFQIYSVPWKGTHSLTKFSCKN 139
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A;Wolecule type: DWA
A;Residues: $2-119 <8412>
A;Cross references: EMBL:M27769
A;Orce: the authors translated the codon ACC for residue 105
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A;Reference number: S02751; MUID:89076507; PMID:3264504
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A;Title: Molecular Cloning and sequence analysis of CDNI
A;Reference number: S00004; MUID:87219149; PMID:3495457
                                                                                                                                                                                                                                                                        Query Match 24.9%; Score 156.5; DB 2; Best Local Similarity 31.4%; Pred. No. 1.6e-08; Matches 33; Conservative 24; Mismatches 45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cystatin C precursor [validated] - human
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A; Residues: 1-141 < SAI>
A; Cross-references GB:M19673; GB:M19170; NID:g186403; PIDN:AAA36116.1; PID:g386826
A; Cross-references GB:M19673; GB:M19170; NID:g186403; PIDN:AAA36116.1; PID:g386826
A; Note: the authors translated the codon GAC for residue 129 as Asn
R; Saitoh, E.; Isemura, S.; Sanada, K.; Kim, H.S.; Smithies, O.; Maeda, N.
Biol. Chem. Hoppe-Seyler 369, 191-197, 1988
A; Title: Cystatin superfamily. Evidence that family II cystatin genes are evolutionarily A; Reference number: S02489; MUID:89076505; PMID:3202964
A; Accession: S02490
A; Status: not compared with conceptual translation
A; Residues: 21-141 < SA2>
A; Residues: 21-141 < SA2>
A; Residues: 21-141 < SA2>
A; Saitoh, E.; Sanada, K.
A; Isemura, S.; Saitoh, E.; Sanada, K.
A; Islochem. 102, 693-704, 1987
A; Title: Characterization and amino acid sequence of a new acidic cysteine proteinase in A; Reference number: A41422; MUID:88139220; PMID:3436950
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cystatin C precursor - mouse

cystatin C precursor C. Full Community

cystatin C precursor C. Full Community

Rysolem, M.; Rawson, C.; Lindburg, K.; Barnes, D.

Biochem. Biophys. Res. Commun. 172, 945-951, 1990

A;Title: Transforming growth factor beta regulates cystatin C in serum-free mouse embryc

A;Reference number: A36163; MUID:91054522; PMID:2241983
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A;Molecule type: protein
A;Residues: 25-141 <1885
R;Isemura, S.; Saitoh, E.; Sanada, K.; Isemura, M.; Ito, S.
R;Isemura, S.; Saitoh, E.; Sanada, K.; Isemura, M.; Ito, S.
A;Iticle: Cystatin S and Their Inhibitors, Turk, V., ed., pp.497-505, Walter de Gruyd
A;Title: Cystatin S and the related cysteine proteinase inhibitors in human saliva.
A;Reference number: A27015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               men
                                                                                                                                                                                                                    Cystatin SA precursor - human
Cyspecies: Homo sapiens (man)
Cybates: 31-Mar-1989 #sequence_revision 30-Jun-1989 #text_change 16-Jul-1999
Cybacession: B29632; S02490; A41422; B27015
R;Saltch, E.; Kim, H.S.; Smithies, O.; Maeda, N.
Gene 61, 329-338, 1987
A;Title: Human cysteine-proteinase inhibitors: nucleotide sequence analysis of three ray. Reference number: A91589; MUID:88185836; PMID:3446578
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LINCPFHDQPHLMRKALCSFQIYSVPWKGTHTLTKSSCKN 119
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Pred. No. 6.3e-09;
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A;Map position: 20p11.2-20p11.2
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A,Residues: 25-134,'D',136-141 <IS2>
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31.5%;
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Matches 29; Conserva
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A; Accession: S04008
A; Molecule type: protein
A; Residues: 97-114 <LAB>
KColella R.; Bird, J.W.C.
Gene 130, 175-181, 1993
A; Title: Isolation and characterization of the chicken cystatin-encoding gene: Mapping to A; Reference number: JN0789; MUD: 93366172; PMID: 8359684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cross-references: GB:M95725
Note: authors failed to translate the codon for residue 115-Tyr
Comment: This protein binds tightly to and inhibits a variety of cysteine proteinases
                                                                                                                                                 A,Title: The cysteine proteinase inhibitor chicken cystatin is a phosphoprotein. A,Reference number: S04008; MUID:89252033; PMID:2721673
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C;Superfamily: cystatin; cystatin homology
C;Superfamily: cystatin; cystatin homology
C;Superfamily: cystatin; cystatin proteins egg white; phosphoprotein
C;Reywords: cystatin sprad sequence #status predicted <SIG>F;1-23/Domain: signal sequence #status predicted <SIG>F;24-139/Product: cystatin, long form #status experimental <CYLF>F;30-139/Product: cystatin, short form #status experimental <CYSF>F;22-139/Product: cystatin, short form #status experimental <CYSF>F;76-80/Region: inhibitory #status experimental
F;76-80/Region: inhibitory #status experimental
F;10-138/Disulfide bonds: #status experimental
F;10-103/Binding site: phosphate (Ser) (covalent) (partial) #status experimental
                                  R;Laber, B.; Krieglstein, K.; Henschen, A.; Kos, J.; Turk, V.; Huber, FEBS Lett. 248, 162-168, 1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 27.1%; Score 170.5; DB 1; Best Local Similarity 37.0%; Pred. No. 6.3e-10; Matches 34; Conservative 19; Mismatches 36;
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A;Molecule type: protein
A;Residues: 1-120 <ESN>
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A; Residues: 24-139 <TUR>
A; Residues: 24-139 <TUR>
B; Anastasi, A.; Brown, M.A.; Kembhavi, A.A.; Nicklin, M.J.H.; Sayers, C.A.; Sunter, D.C.
Biochem J. 211, 129-138, 1983
A; Title: Cystatin, a protein inhibitor of cysteine proteinases. Improved purification fx A; Reference number: A3714; MID: 83256421; PMID: 6409085
A; Contents: annotation; characterization of protein
R; Grubb, A.; Lofberg, H.; Barrett, A.J.
R; Grubb, A.; Lofberg, H.; Barrett, A.J.
A; Title: The disulphide bridges of human cystatin C (gamma-trace) and chicken cystatin.
A; Reference number: S01462
                                        A,Residues: 8-49 &ESN>
R;Esnard, A.; Esnard, F.; Guillou, F.; Gauthier, F.
FEBS Lett. 300, 131-135, 1992
A;Title: Production of the cysteine proteinase inhibitor cystatin C by rat Sertoli cells A;Reference number: S21109; MUID:92225121; PMID:1563513
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R; Auerswald, E.A.; Naegler, D.K.; Schulze, A.J.; Engh, R.A.; Genenger, G.; Machleidt, W.
Bur. J. Blochem. 224, 407-415, 1994
A; Title: Production, inhibitory activity, folding and conformational analysis of an N-te
A; Reference number: S48159; MUID:95010016; PMID:7925354
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NyAlternate names: cystatin 1; cysteine proteinase inhibitor; egg-white cystatin
C;Species: Gallus gallus (chicken)
C;Species: Gallus gallus (chicken)
C;Species: Gallus gallus (chicken)
C;Species: O3-Aug-1984 #sequence revision 12-Apr-1996 #text_change 29-Oct-1999
C;Accession: A34456; A01274; S01461; S48159; S04008; JN0789
R;Colella, R.; Sakaguchi, Y.; Nagase, H.; Bird, J.W.C.
J. Biol. Chem. 264, 17164-17169, 1889
A;Title: Chicken egg white cystatin. Molecular cloning, nucleotide sequence, and tissue A;Accession: A34456; MuID:90008873; PMID:2793849
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A;Residues: 24-139 «SCH»
R;Turk, V.; Brzin, J.; Longer, M.; Ritonja, A.; Bropkin, M.; Borchart, U.; Machleidt, W.
Hoppe-Seyler's Z. Physiol. Chem. 364, 1487-1496, 1983
A;Title: Protein inhibitors of cysteine proteinases. III. Amino-acid sequence of cystati
A;Reference number: S01461; MUID:84110059; PMID:6662498
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A; Residues: 1-139 < COL->
A; Residues: 1-139 < COL->
A; Cross-references: GBL-05077; NID:g211714; PIDN:AAA48744.1; PID:g211715
R; Schwabe, C.; Anastasi, A.; Crow, H.; McDonald, J.K.; Barrett, A.J.
B; Schwabe, C.; Anastasi, A.; Crow, H.; McDonald, J.K.; Barrett, A.J.
A; Title: Cystatin, Amino acid sequence and possible secondary structure.
A; Reference number: A01274; MUID:84178305; PMID:6712597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
27.3%; Score 171.5; DB 2; Length 127;
Best Local Similarity 33.3%; Pred. No. 4.5e-10;
Matches 35; Conservative 24; Mismatches 43; Indels 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           73 KPET--TNC-VPQERELHKQVNCFFSVFAVPWFEQYKILNKSCSS 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | :| || : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : | : : 
                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: protein
A; Residues: 8, 'XX',11-20 <552>
C; Superfamily: cystatin; cystatin homology
C; Keywords: cysteine proteinase inhibitor
F;16-127/Domain: cystatin homology <CYS>
F;80-90,104-124/Disulfide bonds: #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A,Accession: S48159
A,Status: preliminary
A,Molecule type: protein
A; Molecule type: protein
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Indels

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C;Species: Rattus sp. (rat)
C;Species: Latury Sp. (rat)
C;Date: 2.1Nov-1993 #sequence_revision 03-Nov-1995 #text_change 16-Jul-1999
C;Date: 2.1Nov-1993 #sequence_revision 03-Nov-1995 #text_change 16-Jul-1999
C;Accession: 810587
R;Esnard, F.; Bsnard, A.; Faucher, D.; Capony, J.P.; Derancourt, J.; Brillard, M.; Gauth)
Biol. Chem. Hoppe-Seyler 371(Suppl.), J. (61-166, 1990
A;Title: Rat cystatin C: the complete amino acid sequence reveals a site for N-glycosylat
A;Reference number: 810587; MUID:90380276; PMID:2400577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Note: the sequence from Fig. 2 is inconsistent with that from Fig. 1 in having 18-Ala C;Superfamily: cystatin; cystatin homology <CYS> F;9-120/Domain: cystatin homology <CYS>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26.6%; Score 167.5; DB 2; 33.0%; Pred. No. 1.1e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         40;
33; Conservative 24; Mismatches
```

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GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
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OM protein - protein search, using sw model

March 18, 2004, 14:06:15; Search time 22.1329 Seconds (without alignments) 499.799 Million cell updates/sec Run on:

US-09-941-314-3

Title: Perfect score: Sequence:

1 YQARKKTFLSVHEVMAVENY......VFAVPWFEQYKILNKSCSSD 115

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

283366 segs, 96191526 residues Searched: Total number of hits satisfying chosen parameters:

Minimum DB seg length: 0 Maximum DB seg length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database

PIR 78:*
1: pir1:*
2: pir2:*
3: pir3:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

		*				
Result		Query				
No.	Score	Match	Length	8	ID	Description
1	214	34.0	139	2	A45361	cystatin-related e
8	171.5	27.3	127	~	S07085	cystatin C precurs
m	170.5	-	139	Н	UDCH	D
4	167.5	26.6	120	~	S10587	
Ω.	160.5	25.5	141	N	B29632	cystatin SA precur
9	156.5	24.9	140	N	A36163	U
7	155	24.6	146	-1	пнал	υ
σ	153.5	24.4	112	Н	UDBO	ı
σ	146.5	23.3	141	н	UDHUP1	cystatin S precurs
10	139.5	22.2	141	Н	UDHUP2	SN
11	134	21.3	111	٦	JC2040	,
12	131.5	20.9	142	7	A47142	Ω
13	129.5	20.6	141	7	JQ1470	ຜ
14	127	20.2	111	7	A28793	ı
15	126	20.0	132	~	JC4918	cystatin precursor
16	ά.	16.3	133	7	JC4536	
17	ω.	15.7	434	Н	KGBOL2	kininogen, LMW II
18	98.5	15.7	619	Н	KGBOH2	
19	ė	15.3	436	н	KGBOL1	
20	Ġ	15.3	621	Н	KGBOH1	kininogen, HMW I p
21	95.5	15.2	162	7	A43428	onchocystatin - ne
22	m	14.9	427	Н	KGHUL1	kininogen, LMW pre
23	ë.	14.9	644	Н	KGHUH1	MMI
24	87	13.8	433	N	A28055	n,
25	87	13.8	639	7	A25486	kininogen, HMW I p
26	81	12.9	430	7	A23897	major acute phase
27	81	12.9	430	7	B28055	
28	80	12.7	498	N	T31871	hypothetical prote
53	79	12.6	430	Н	KGRTT1	

hypothetical prote	major acute phase	membrane protein P	glucan 1,3-beta-gl	beta-gluconase [im	CHL1 protein - yea	protein H14A12.5 [hypothetical prote	hypothetical prote	methionine-tRNA li	methionine tRNA sy	methionine tRNA sy	glucan 1,3-beta-gl	hypothetical prote	hypothetical prote
D64151	KGRIM	842613	A47702	T52149	S12499	D88508	T23004	T23130	SYECMT	C85839	H90993	JN0118	D72061	B86562
77	9	Ŋ	~	N	~	~	7	N	Н	~	~	~	7	N
430	423	582	438	438	861	132	1227	1779	677	677	677	448	184	184
12.2	11.9	11.8	11.7	11.7	11.6	11.4	11.4	11.4	11.3	11.3	11.3	11.2	11.1	11.1
77	75.0	74	73.5	73.5	73	71.5	71.5	71.5	71	71	71	70.5	70	70
30	32	33	34	35	36	37	38	39	40	41	42	43	44	45

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cystatin-related epididymal specific protein - mouse (fragment)

related to the cystatin family is C'Species: Mus musculus (house mouse)
C'Date: 10-Jun-1993 #sequence_revision 18-Nov-1994 #text_change 05-Nov-1999
C'Date: 10-Jun-1993 #sequence_revision 18-Nov-1994 #text_change 05-Nov-1999
C'Accession: A45361
R'Cornwall, G.A.; Orgebin-Crist, M.C.; Hann, S.R.
Mol. Endoctinol. 6, 1653-1664, 1992
A/Title: The CRES gene: a unique testis-regulated gene related to the cystatin f A;Reference number: A45361; MUID:93078799; PMID:1280328
A,Accession: A45361
A,Accession: A45361
A,Accession: A45361
A,Residues: preliminary; not compared with conceptual translation
A,Molecule type: nucleic acid
A,Residues: 1-139 <CORA,CORS-references: GB:S49926; NID:g260492; PIDN:AAC35390.1; PID:g260493
A,Cross-references: CB:S4926; NID:g260492; PIDN:AAC35390.1; PID:g260493
A,Note: sequence extracted from NCBI backbone (NCBIP:118813)
C;Superfamily: cystatin, cystatin homology <CYS>

4 Query Match 34.0%; Score 214; DB 2; Length 139; Best Local Similarity 37.1%; Pred. No. 2.9e-14; Matches 43; Conservative 29; Mismatches 30; Indels 14; Gaps

10 SVHEVMAVENY-----AKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLE 59 22 SKNEVKA-QNYFGSINISNANVKQCVWFAMKEYNKESEDKYVFLVDKILHAKLQITDRME ò 유

60 YHLINVEMQWTTCQKP.-ETTNCVPQER-ELHKQVNCFFSVFAVPWFEQYKILINKSC 112 δ

Cystatin C precursor - rat (fragment)
C;Species: Rattus norvegicus (Norway rat)
C;Species: Rattus norvegicus (Norway rat)
C;Dates: 01-Dec-1993 #sequence revision 03-Aug-1995 #text_change 16-Jul-1999
C;Accession: S07085; S01337; S21109
R;Cole, T.; Dickson, P.W.; Esnard, F.; Averill, S.; Risbridger, G.P.; Gauthier, F.; Schrk Eur. J. Biochem. 186, 35-42, 1989
A;Title: The cDAN structure and expression analysis of the genes for the cysteine protein A;Reference number: S07085; MuID:90092122; PMID:2689174
A;Accession: S07085
A;Status: preliminary
A;Residues: 1-127 < COL.>
A;Residues: 1-127

A;Cross-references: EMBL:X16957; NID:956041; PIDN:CAA34831.1; PID:9736290 R;Esnard, A.; Esnard, F.; Faucher, D.; Gauthier, F. FEBS Lett. 236, 475-478, 1988 A;Title: Two rat homologues of human cystatin C. A;Reference number: S01337; MUID:88313020; PMID:3044831

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                                                                                                                                                                                                                                                                                                                          Query Match
30.0%; Score 189; DB 9; Length 36;
Best Local Similarity 100.0%; Pred. No. 3.6e-14;
Matches 36; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 29.7%; Score 187; DB 9; Length 35; Best Local Similarity 100.0%; Pred. No. 5.9e-14; Matches 35; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to TITLE OF INVENTION: Inhibit Cancer Procesqulant Protein File REPERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FASTEEQ for Windows Version 4.0
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 2, Application US/09740638; Patent No. US20020006656A1; Patent No. US20020006656A1; GENERAL INPORMATION: GENERAL INPORMATION: TITLE OF INVENTION: Superfamily; TITLE OF INVENTION: Superfamily; FILE REFERENCE: 99-104
CURRENT APPLICATION NUMBER: US/09/740,638; CURRENT FILING DATE: 2000-12-18
NUMBER OF SEQ ID NOS: 13
SOFTWARE: FASESEQ for Windows Version 3.0; TANGERY OF SEQ ID NOS: 1300-12-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDK 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTD 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22 KDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTD 56
              FILE REFERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
FRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
SEGO ID NO 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; Sequence 8, Application US/09941314; Patent No. US20020142396Al; GENERAL INFORMATION:
                                                                                                                                                                                                                                 TYPE: PRT
CORGANISM: Homo sapiens
US-09-941-314-6
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TYPE: PRT
ORGANISM: Homo sapiens
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ORGANISM: Homo sapiens
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US-09-740-638-2
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Search completed: March 18, 2004, 14:30:52 Job time : 70.5933 secs

us-09-941-314-3.mar18.rapb

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Gaps
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                   33 NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPETTN 78
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Patent No. US20020142396A1

Patent No. US20020142396A1

APPLICANT: ZymoGenetics, Inc.

TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to

TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein

FILE REFERENCE: 00-81PC

CURRENT APPLICATION NUMBER: US/09/941,314

PRIOR FILING DATE: 2001-08-29

PRIOR FILING DATE: 2001-09-01
                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein FILE REFERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR PELING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARES FASTSEQ for Windows Version 4.0
LENGTH: 46
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; Patent No. US20020142396A1
; CBURRAL INFORMATION:
; APPLICANT: Syndeenetics, Inc.
; TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               40.4%; Score 254; DB 9; I
100.0%; Pred. No. 2.1e-21;
iive 0; Mismatches 0;
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Matches 33; Conservative 0; Mismatches
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SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 12
LENGTH: 33
                                                                                                                                                                                                   Sequence 10, Application US/09941314
Patent No. US20020142396A1
GENERAL INFORMATION: ZymoGenetics, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity 100.0
Matches 46; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM: Homo sapiens
                                                                                                                                                                                US-09-941-314-10
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US-09-941-314-12
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                                                                                                                                                                                                                         Sequence 48936, Application US/09864761

Patent No. US20020048763A1

GENERAL INFORMATION:
APPLICANT: Penn, Sharron G.
APPLICANT: Rank, David R.
APPLICANT: Rank, Wenshend K.
APPLICANT: Chen, Wenshend K.
TITLE OF INVENTION: HUMAN GENOME-DERIVED SINGLE EXON NUCLEIC ACID PROBES USEFUL FOR THE PERPENSION ANALYSIS BY MICROARRAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
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                                                 4 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQ 53
                                                                               RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQ 50
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0; Indels
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OTHER INFORMATION: EST HUMAN HIT: A1200857.1, EVALUE 5.00
OTHER INFORMATION: SWISSPROT HIT: 060676, EVALUE 1.00e-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: Annomax Sequence Listing Engine vers. 1.1 SEQ ID NO 48936
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE REPERENCE: Acomica.X-1
CURRENT APPLICATION NUMBER: US/09/864,761
CURRENT PELLIG DATE: 2001-05-23
PRIOR APPLICATION NUMBER: US 60/180,312
PRIOR APPLICATION NUMBER: US 60/180,312
PRIOR APPLICATION NUMBER: US 60/207,456
PRIOR FILING DATE: 2000-06-26
PRIOR FILING DATE: 2000-06-36
PRIOR FILING DATE: 2000-06-36
PRIOR FILING DATE: 2000-06-30
PRIOR APPLICATION NUMBER: US 60/236,359
PRIOR APPLICATION NUMBER: US 60/236,359
PRIOR FILING DATE: 2000-09-37
PRIOR FILING DATE: 2000-09-37
PRIOR FILING DATE: 2001-01-30
PRIOR PRILING DATE: 2001-01-30
PRIOR PRILING DATE: 2001-01-30
PRIOR PRILING DATE: 2001-01-30
PRIOR APPLICATION NUMBER: PCT/US01/00663
PRIOR APPLICATION NUMBER: PCT/US01/00663
PRIOR APPLICATION NUMBER: PCT/US01/00668
PRIOR APPLICATION NUMBER: PCT/US01/00669
PRIOR APPLICATION NUMBER: PCT/US01/00669
PRIOR FILING DATE: 2001-01-30
PRIOR APPLICATION NUMBER: PCT/US01/00667
PRIOR FILING DATE: 2001-01-30
PRIOR APPLICATION NUMBER: US 60/234,687
PRIOR PILING DATE: 2000-09-21
PRIOR APPLICATION NUMBER: US 09/774,203
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50; Conservative
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Best Local Similarity
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US-09-864-761-48936
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Best Local Similarity
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COTHER INFORMATION:
US-09-864-761-34822
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US-09-941-314-17
iS-09-941-314-17
iS-09-941-314-17
iSequence 17, Application US/09941314
j Eatent No. US20020142366A1
j GENERAL INFORMATION:
APPLICANT: ZYMOGENETICS, Inc.
TITLE OF INVENITON: Mammalian Cystatin-8 and Its Use to TITLE OF INVENITON: Inhibit Cancer Procoagulant Protein FILE REFERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
pRIOR PPLIATGAINON NUMBER: 60/230,230
pRIOR PILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
iLENGTH: 48
                                                           ch 45.8%; Score 288; DB 9; Length 52; 1 Similarity 100.0%; Pred. No. 3.4e-25; 52; Conservative 0; Mismatches 0; Indels
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US-09-941-314-13
| Sequence 13. Application US/09941314
| Patent No. US2002142396A1
| Patent No. US2002142396A1
| GENERAL INFORMATION:
| APPLICANT: ZymcGenetics, Inc.
| TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein FILE REFERENCE: 00-81PC
| CURRENT PELLING DATE: 2001-08-29
| CURRENT FILING DATE: 2001-08-29
| PRIOR FILING DATE: 2001-09-01
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100.0%; Pred. No. 2.1e-23;
iive 0; Mismatches 0;
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100.0%; Pred. No. 1.6
tive 0; Mismatches
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SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 13
LENGTH: 49
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Best Local Similarity 100.
Matches 49; Conservative
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Best Local Similarity 100.
Matches 48; Conservative
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US-09-941-314-13
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ORGANISM: Homo sapiens
ORGANISM: Homo sapiens
                                                           Query Match
Best Local Similarity
    US-09-941-314-17
                                                                                                       Matches
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19.864-01.23482.7 Application US/09864761
19.8640ence 34822, Application US/09864761
19.8640ence 34822, Application US/09864761
19.8640ence 34822, Application US/0004676A1
19.8640ence 34822, Application US/0004676A1
19.8640ence 34822, Application: Blanco G. Section C. Section C. Septicant: Rank, David R. APPLICANT: Rank, David R. APPLICANT: Rank, David R. APPLICANT: Hanzel, David R. APPLICANT: Chen, Wentheng C. Section C. Sec
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D IN LUNG, SIGNAL = 1.5
D IN BRAIN, SIGNAL = 1.8
D IN PLACENTA, SIGNAL = 1.7
D IN ADULT LIVER, SIGNAL = 1.6
D IN FETAL LIVER, SIGNAL = 1.3
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PRIOR APPLICATION NUMBER: PCT/USO1/00662
PRIOR PILING DATE: 2001-01-30
PRIOR FILING DATE: 2001-01-30
PRIOR FILING DATE: 2001-01-30
PRIOR FILING DATE: 2001-01-30
PRIOR PILING DATE: 2001-01-30
PRIOR PILING DATE: 2000-09-21
PRIOR PILING DATE: 2000-09-21
PRIOR PILING DATE: 2000-09-21
PRIOR PILING DATE: 2000-09-30
PRIOR APPLICATION NUMBER: US 09/608,408
PRIOR APPLICATION NUMBER: US 09/774,203
PRIOR APPLICATION NUMBER: US 09/774,203
PRIOR APPLICATION NUMBER: 2001-01-29
NUMBER OF SEQ ID NOS: 49117
SEQ ID NO 34822
LENGTH: 50
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IN HEART, SIGNAL = 1.5
IN HELA, SIGNAL = 1.3
IN HEL100, SIGNAL = 1.3
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ORGANISM: Homo sapiens
FEATURE:
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41.7%; Score 262; DB 9; Length 50; 100.0%; Pred. No. 2.9e-22;

RESULT 9

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US-09-941-314-15
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Best Local Similarity 100.0%; Pred. No. 2.1e-63;
Matches 115; Conservative 0; Mismatches 0; Indels (
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Sequence 2, Application US/09941314;
Patent No. US20020142396A1;
GENERAL INFORMATION:
APPLICANT: Expendentics, Inc.;
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein;
FILE REFREENCE: 00-817.
FILE REPRENCE: 00-817.
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29;
PRIOR PILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
TYPE: PRT
CRENGTH: 137
TYPE: PRT
CRENGTH: Homo sapiens
                   APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
FILE REPERBENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT APPLICATION NUMBER: 60/230,230
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: PastSEQ for Windows Version 4.0
SEQ ID NO SEQ ID NOS: 19
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Patent No. US20020142396A1

GENERAL INFORMATION:

APPLICANT: ZymoGenetics, Inc.

TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to TITLE OF INVENTION: Inhibit Cancer Proceagulant Protein; FILE REFERENCE: 00-81PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity 100.
Matches 115; Conservative
                                                                                                                                                                                                                                                                                                                                          TYPE: PRT
ORGANISM: Homo sapiens
GENERAL INFORMATION:
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US-09-941-314-2
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Sequence 16, Application US/09941314

Patent No. US20020142396A1

GENERAL INFORMATION:

APPLICANT: ZymoGenetics, Inc.

TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
FILE REFERENCE: 00-81PC

CURRENT APPLICATION NUMBER: US/09/941,314

CURRENT FILING DATE: 2001-08-29

PRIOR FILING DATE: 2001-09-01
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CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT APPLICATION NUMBER: 00/230,230
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SEQ ID NOS: 19
SEQ ID NOS: 8 OF Windows Version 4.0
SEQ ID NOS: 52
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Best Local Similarity 100.0%; Pred. No. 7.3e-43;
Matches 80; Conservative 0; Mismatches 0;
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Best Local Similarity 100.0%; Pred. No. 2.5e-30;
Matches 59; Conservative 0; Mismatches 0;
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: PARKSEQ for Windows Version 4.0
SLEQ ID NO 15
LENGTH: 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQ ID NOS: 19
7 SOFTWARE FastSRQ for Windows Version 4.0
7 SEQ ID NO 16
7 LENGTH: 59
7 TYPE: PRT
7 ORGANISM: Homo sapiens
US-09-941-314-16
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Patent No. US20020142396A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     91 NCFFSVFAVPWFEQYKILNK 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61 NCFFSVFAVPWFEQYKILNK 80
                                                                                                                                                                                                         TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
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March 18, 2004, 14:15:06 ; Search time 69.5933 Seconds (without alignments) 427.913 Million cell updates/sec
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GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
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Maximum Match 100%
Listing first 45 summaries
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Gapop 10.0 , Gapext 0.5
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Maximum DB seq length: 200000000
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

Score 629 629	Query Match Length DB 100.0 115 9 100.0 117 9	ngth 115 117 137	<u>а</u> . о о о	ID US-09-941-314-3 US-09-941-314-4 US-09-941-314-2	Description Sequence 3, Appli Sequence 4, Appli
53.1		8 0 0 0 0	თთ	US-09-941-314-15 US-09-941-314-16	Seguence 15, Appl Seguence 16, Appl
45.8		52 48	თ თ	US-09-941-314-14 US-09-941-314-17	Sequence 14, Appl Sequence 17, Appl
43.2		4 9	0 0	US-09-941-314-13	Sequence 13, Appl
41.7		20 0	ט ע	US-09-864-761-34822 US-09-864-761-48936	Sequence 34822, A Sequence 48936, A
40.4		46	σ	US-09-941-314-10	Sequence 10, Appl
30.0		33	σ	US-09-941-314-12	Sequence 12, Appl
30.0		36	0	US-09-941-314-6	Sequence 6, Appli
29.7		32	0	US-09-941-314-8	Seguence 8, Appli
28.2		145	σ	US-09-740-638-2	Sequence 2. Appli

2391748 29 2 1 2166	Sequence 47, Appl Sequence 16, Appl Sequence 24, Appl Sequence 22, Appl Sequence 5, Appl Sequence 111, Appl Sequence 141, Appl
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ALIGNMENTS

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                                                                                    APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
FILE REPERRENCE: 00-812C
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT APPLICATION NUMBER: 00/230,230
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 3
LENGTH: 115
US-09-941-314-3
; Sequence 3, Application US/09941314
; Patent No. US20020142396A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                         TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-941-314-3
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RESULT 2 US-09-941-314-4 'Sequence 4, Application US/09941314 'Patent No. US20020142396A1

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TELEFAX: 301 309 8512

INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
LENGTH: 141 amino acids
TYPE: amino acid
STRANDEDNESS:
TOPOLOGY: linear
MOLECULE TYPE: protein
HYPOTHETICAL: NO
ORIGINAL SOURCE:
INDIVIDUAL ISOLATE: CYSTATIN SN
US-08-744-138-6
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24 SLOWITDOYNKESDDKYHFRIFRVLKVOROVTDHLEYHLNVEMOWTICOK--PETTNCVP 81 3; Gaps Query Match 25.5%; Score 160.5; DB 3; Length 141; Best Local Similarity 31.5%; Pred. No. 6.2e-12; Matches 29; Conservative 24; Mismatches 36; Indels 3

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Search completed: March 18, 2004, 14:25:34 Job time : 30.4345 secs

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Application US/09886319A
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PAPPLICANT: GRUBB, ANDERS; LUNDWALL, AKE; ABRAHAMSON, MAGNUS;

PALBOGE, HENRIK

TITLE OF INVENTION: RECOMBINANT 3-DES-OH-CYSTATIN C PRODUCED

BY EXPRESSION IN A PROCARYOTIC HOST CELL

NUMBER OF SEQUENCES: 8

CURRENT APPLICATION NATA:

APPLICATION NUMBER: US/07/929,290

FILING DATE: 13-AUG-1992

APPLICATION NUMBER: 440,221

FILING DATE: 20-NAY-1989

FILING DATE: 20-NAY-1989
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Patent No. 6534471
GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION:
FILE REFERENCE: 58069
CURRENT APPLICATION NUMBER: US/09/775,932
CURRENT FILING DATE: 2001-02-02
PRIOR APPLICATION NUMBER: 60/095,503
PRIOR FILING DATE: 1999-08-05
PRIOR PELLING DATE: 1998-08-05
PRIOR PELLING DATE: 1998-08-05
PRIOR PILING DATE: 1998-08-05
PRIOR SEQ ID NOS: 32
SOFTWARE: Patentin Ver. 2.0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    76 TINC-VPOERELHKQVNCFFSVFAVPWFEQYKILNKSCSSD 115
107 HDEPEMAKYTTCTFVVYSIPWLNQIKLLESKC 138
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CRGANISM: Homo sapiens
US-09-775-932-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
Matches 35; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity
Matches 29; Conserv
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US-09-775-932-8
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g ઠે RESULT 14 US-09-886-319A-46

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APPLICANT: Werner, Sabine

APPLICANT: Werner, Sabine

APPLICANT: Werner, Sabine

APPLICANT: Halle, John-Peter

APPLICANT: Halle, John-Peter

APPLICANT: Regembogen, Johannes

APPLICANT: Regembogen, Johannes

APPLICANT: Goppelt, Andreas

TITLE OF INVENTION: the Diagnosis or Treatment of Skin Disorders and Wound

TITLE OF INVENTION: Healing and for the Identification of Pharmacologically

TITLE OF INVENTION: Active Substances

TITLE OF INVENTION: Active Substances

FILE REFERENCE: 50125/014002

CURRENT APPLICATION NUMBER: US/09/886,319A

CURRENT FILING DATE: 2000-06-20

PRIOR PELICATION NUMBER: DE 10030149.5

PRIOR APPLICATION NUMBER: DE 10030149.5

PRIOR APPLICATION NUMBER: 2000-06-20

NUMBER OF SEQ ID NOS: 84

SOFTWARE: PatesEQ for Windows Version 4.0

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CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/744,138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE: Human Genome Sciences, Inc. STREET: 9410 Key West Avenue CITY: Rockville STATE: Maryland COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Gentz, Reiner L.
APPLICANT: Ni, Jian
APPLICANT: Nosen, Craig A.
APPLICANT: Yu, Guo-Liang
APPLICANT: Yu, Guo-Liang
APPLICANT: Human Cystatin E
NUMBER OF INVENTION: Human Cystatin E
CORRESPONDENCE ADDRESS:
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NAME: Brookes, A. Anders
REGISTRATION WINBER: 36,373
REFERENCE/DOCKET NUMBER: PF202P1
TELECOMMUNICATION INFORMATION:
TELEPHONE: 301 309 8504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 6, Application US/08744138
Patent No. 6011012
GENERAL INFORMATION:
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COMPUTER: IBM PC compatible
OOPERATING SYSTEM: PC-DOS/MS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 32.4%;
Matches 34; Conservative
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
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Length 139;

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Best Local Similarity 37.03
Matches 34; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CITY: Hackensack
STATE: New Jersey
                                        LIBRARY: GenBank
CLONE: 118195
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    TOPOLOGY: line
IMMEDIATE SOURCE:
LIBRARY: GenBa
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HYPOTHETICAL:
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                                                                                 US-09-314-777-4
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                                                                                                                       Query Match
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                                                                                                                                                                                                                                                                                                                                                                       Query Match 27.1%; Score 170.5; DB 2; Length 139; Best Local Similarity 37.0%; Pred. No. 3.6e-13; Matches 34; Conservative 19; Mismatches 36; Indels 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Goli, Surya K.
APPLICANT: Goli, Surya K.
TITLE OF INVENTION: NOVEL HUMAN CYSTATIN-LIKE
TITLE OF INVENTION: PROTEIN
NUMBER OF SEQUENCES: 4
CORRESPONDENCE ADDRESS: ADDRESS: ADDRESS: ADDRESSEE: Incyte Pharmaceuticals, Inc.
STREET: 3174 Porter Drive
CITY: Palo Alto
STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        81 PQERELHKQVNCFFSVFAVPWFEQYKILNKSC 112
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OPERATING SYSTEM: DOS
OPERATING SYSTEM: DOS
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/314,777
FILING DATE:
ATTORNEY AGENT INFORMATION:
NAME: Bilings, Lucy
REGISTRATION NUMBER: 36,749
REFERENCE/DOCKET NUMBER: PF-0193 US
TELECOMMUNICATION INFORMATION:
TELEFAX: 415-845-0555
TELEFAX: 415-845-4166
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 139 amino acids
TYPE: amino acids
TYPE: amino acids
TYPE: amino acids
TYPE: amino acids
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NAME: Billings, Lucy J.
REGISTRATION NUMBER: 36,749
REFERENCE/DOCKET NUMBER: PF-0193 US
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-85-0555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/791,522
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US-09-314-777-4
US-09-314-777-4
Sequence 4, Application US/09314777
Patent No. 6110686
GENERAL INFORMATION:
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TYPE: amino acid
STRANDEDNESS: single
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
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COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
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LIBRARY: Gell.
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24 SLOWITDOYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKP--ETTNC-V 80
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                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                       Sequence 15, Application US/08849303
Patent No. 6680424
GENERAL INFORMATION:
APPLICANT: Atkinson, Howard J.
APPLICANT: MCPherson, Michael J.
APPLICANT: Urwin, Peter E.
TITLE OF INVENTION: MODIFIED PROTEINASE INHIBITORS
NUMBER OF SEQUENCES: 79
CORRESPONDENCE ADDRESS:
ADDRESSEE: Klauber & Jackson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/849,303 FILING DATE: 21-MAY-1997 CLASSIFICATION: 514 ATTORNEY/AGENT INFORMATION:
27.1%; Score 170.5; DB 3;
37.0%; Pred. No. 3.6e-13;
tive 19; Mismatches 36;
                                                                                                                                                                                                              81 POERELHKOVNCFFSVFAVPWFEQYKILNKSC 112
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: Jackson Esg., David A.
REGISTRATION NUMBER: 26,742
REFERENCE/DOCKET NUBER: 1321-1-003
TELECOMMUNICATION INFORMATION:
TELECHONE: 201-487-5800
TELEFAX: 201-343-1684
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INFORMATION FOR SEQ ID NO: 15:
SEQUENCE CHARACTERISTICS:
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TYPE: amino acid
STRANDEDNESS: single
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Sequence 4, Application US/08791522
Patent No. 5935817
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STREET: 3174 Porter Drive
CITY: Palo Alto
STATE: CA
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COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM COMPATIBLE
OPERATING SYSTEM: DOS
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Best Local Similarity 37.0%
Matches 34; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-791-522-4
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                                                                                                                                                                                                                                                                                                                                Gaps
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                                                                                                                                                                                                                                                                                      Length 141;
                                                                                                                                                                                                                                                                               Query Match
29.8%; Score 187.5; DB 3; Length 1
Best Local Similarity 39.6%; Pred. No. 3.1e-15;
Matches 38; Conservative 20; Mismatches 35; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE PATENTIN Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/849,303
FILING DATE: 21-MAY-1997
CLASSIFICATION: 514
ATTONREY/AGENT INFORMATION:
NAME: Jackson Esq., David A.
REGISTRATION NUMBER: 26,742
REFERENCE/DOCKET NUMBER: 1321-1-003
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELEPERAS: 201-343-1684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 19, Application US/08849303
; Sequence 19, Application US/08849303
; Patent No. 6680424
; Patent No. 6680424
; APPLICANT: Arkinson, Howard J.
APPLICANT: McPherson, Michael J.
APPLICANT: MoDIFIED PROTEINASE INHIBITORS
INUMBER OF SEQUENCES: 79
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                103 NCLFQQDPKMKKMVFCIFIVSSKPWKFELKMLKKQC 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                        78 NCV-PQERELHKQVNCFFSVFAVPWFEQYKILNKSC 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   E: Klauber & Jackson
411 Hackensack Avenue, 4th Floor
PRIOR FILING DATE: 1999-11-01
PRIOR APPLICATION NUMBER: 60/109,217
PRIOR FILING DATE: 1998-11-20
PRIOR APPLICATION NUMBER: 60/156,382
PRIOR FILING DATE: 1999-09-28
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FRRESEQ for Windows Version 3.0
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INFORMATION FOR SEQ ID NO: 19:
SEQUENCE CHARACTERISTICS:
LENGTH: 127 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 33.39
Matches 35, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HYPOTHETICAL: NO-849-303
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                                                                                                                                                                                                                  ORGANISM: Homo sapiens
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STATE: New Jersey
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: amino acid
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                                                                                                                                                       SEQ ID NO 2
LENGTH: 141
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13 EVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQ 72
                                                   22 EADASEEGVORALDFAVSEÝNKGSNDAÝHSRAIQÝVRARKÓLVAGINÝYLDVEMGRÍTÍČT 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     24 SLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKP--ETTNC-V 80
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                                                                                                                                                                                                                                                                   US-09-775-932-16

Sequence 16, Application US/09775932

Sequence 16, Application US/09775932

Sequence 16, Application US/0975932

GENERAL INFORMATION:

APPLICANT: University of British Columbia

TITLE OF INVENTION:

FILE REPERENCE: $8869

CURRENT APPLICATION NUMBER: US/09/775,932

PRIOR APPLICATION NUMBER: CA99/00717

PRIOR APPLICATION NUMBER: 60/095.503

PRIOR APPLICATION NUMBER: 60/095.503

PRIOR FILING DATE: 1998-08-05

NUMBER OF SEQ ID NOS: 32

SOFTWARE: PatentIn Ver: 2.0

SEQ ID NO 16

LEAST 116
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                                                                                                             73 KPET--TNC-VPQERELHKQVNCFFSVFAVPWFEQYKILNKSCSS 114
                                                                                                                                                Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
APPLICANT: Bandman, Olga
APPLICANT: Goli, Surya K.
TITLE OF INVENTION: NOVEL HUMAN CYSTATIN-LIKE
TITLE OF INVENTION: PROTEIN
NUMBER OF SEQUENCES:
CORRESPONDENCE ADDRESS:
ADDRESSEE: Incyte Pharmaceuticals, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   81 PQERELHKQVNCFFSVFAVPWFEQYKILNKSC 112
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PILING DATE: Filed Herewith CLASSIFICATION: 514
PRIOR APPLICATION: 514
PRIOR APPLICATION NUMBER:
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Gaps

3;

Indels

Length 142;

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46 KQCLWPAMQEYNKESEDKYVFLVVKTLQAQLQVTNLLEYLIDVEIARSDCRKPLSTNEIC 105
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                                                                                                                                                                                                                                  Query Match 30.0%; Score 188.5; DB 3; Best Local Similarity 40.4%; Pred. No. 2.4e-15; Matches 38; Conservative 23; Mismatches 30;
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                                                                                                                                                                                                                                                                                                                                                                                              80 VPQER-ELHKQVNCFFSVFAVPWFEQYKILNKSC 112
PRIOR APPLICATION NUMBER: 60/109,217
PRIOR FILING DATE: 1998-11-20
PRIOR PPLICATION NUMBER: 60/156,382
PRIOR FILING DATE: 1999-09-28
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 4
LENGTH: 142
                                                                                                                                                          TYPE: PRT
ORGANISM: Homo sapiens
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Fatent No. 6235708
GENERAL INFORMATION:
APPLICANT: Holloway, James L.
APPLICANT: Holloway, James L.
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN T
FILE REPRENCE: 98-72
CURRENT APPLICATION NUMBER: US/09/431,480
CURRENT FILING DATE: 1999-11-01
EARLIER APPLICATION NUMBER: 60/109,217
EARLIER APPLICATION NUMBER: 60/156,382
EARLIER PILING DATE: 1999-09-28
NUMBER OF SEQ ID NOS: 22
SOFTWARE: PastSEQ for Windows Version 3.0
SEQ ID NO 4
LENGTH: 142
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                                                                                                                                                                                                                   34.0%; Score 214; DB 3; Length 142; 37.1%; Pred. No. 1.8e-18; tive 29; Mismatches 30; Indels 14;
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    PRIOR FILING DATE: 1998-11-20
PRIOR APPLICATION NUMBER: 60/156,382
PRIOR FILING DATE: 1999-09-28
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 3
LENGTH: 142
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; Sequence 4, Application US/09617302
; Patent No. 6245529
; GENERAL INFORMATION:
                                                                                                                                                                                                                   Query Match
Best Local Similarity 37.13
Matches 43; Conservative
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US-09-431-480-4
                                                                                                                                          TYPE: PRT ORGANISM: Mus musculus
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US-09-431-480-4
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ORGANISM:
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Best Local &
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20 YAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK--PETT 77
                                                                                GENERAL INFORMATION:

APPLICANT: Holloway, James L.
APPLICANT: Holloway, James L.
APPLICANT: Holloway, James L.
APPLICANT: Holloway, James L.
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN T
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN T
CURRENT APPLICATION NUMBER: US/09/431,480

CURRENT FILING DATE: 1999-11-01

EARLIER FILING DATE: 1999-11-01

EARLIER FILING DATE: 1999-10-26

SAPLIER FILING DATE: 1999-09-28

NUMBER OF SEQ ID NOS: 22

SOFTWARE: FASTISEQ FOR WINDOWS VERSION 3.0

SEQ ID NO 2
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Patent No. 6245529
GENERAL INFORMATION:
APPLICANT: Holloway, James L.
APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN T
FILE REFERENCE: 98-72 C1
CURRENT APPLICATION NUMBER: US/09/617,302
CURRENT PILING DATE: 2000-07-17
PRIOR APPLICATION NUMBER: 09/431,480
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US-09-431-480-2
; Sequence 2, Application US/09431480
; Patent No. 6235708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Homo sapiens
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APPLICANT: Holloway, James L.
APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN T
FILE REFERENCE: 98-72 C1
CURRENT APPLICATION NUMBER: US/09/617,302
CURRENT PILING DATE: 2000-07-17
PRIOR APPLICATION NUMBER: 09/431,480
PRIOR FILING DATE: 1999-11-01

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US-09-617-302-3
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Sequence 4, Appli
Sequence 4, Appli
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Sequence 19, Appli
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Sequence 4, Appli
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Sequence 6, Appli
Sequence 6, Appli
Sequence 24, Appli
Sequence 5, Appli
Sequence 5, Appli
Sequence 48, Appl
Sequence 18, Appli
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Sequence 2, Appli
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Patent No. 5432264
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                                                                                                                               March 18, 2004, 14:07:11; Search time 29.4145 Seconds (without alignments) 201.701 Million cell updates/sec
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Sequence 3, Ap
Sequence 3, Ap
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/cgn2_6/ptodata/2/iaa/PcTUS_COMB.pep:*
                  GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
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US-09-411-480-4

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US-09-411-480-2

US-09-617-302-2

US-08-617-302-2

US-08-617-302-2

US-09-775-932-16

US-09-314-777-4

US-09-314-777-4

US-09-314-777-4

US-09-314-777-4

US-09-314-777-4

US-09-314-777-4

US-09-241-376-6

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US-09-241-376-6

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US-08-791-522-3
US-08-744-138-3
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Maximum Match 100%
Listing first 45 summaries
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Query
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Sequence 47, 1
Sequence 3, Al
Sequence 37, 1
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APPLICANT: Holloway, James L.
APPLICANT: Holloway, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN T
FILE REPERBNCE: 99-72
CURRENT APPLICATION NUMBER: US/09/431,480
CURRENT FILING DATE: 1999-11-01
EARLIER APPLICATION NUMBER: 60/109,217
EARLIER APPLICATION NUMBER: 60/109,217
EARLIER FILING DATE: 1999-11-20
EARLIER FILING DATE: 1999-09-28
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FastsEQ for Windows Version 3.0
SEQ ID NO 3.0
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Patent No. 6245529
GENERAL INFORMATION:
APPLICANT: Holloway, James L.
APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN 1
TITLE PEFERENCE: 98-72 CL
CURRENT APPLICATION NUMBER: US/09/617,302
CURRENT PILING DATE: 2000-07-17
PRIOR APPLICATION NUMBER: 09/431,480
PRIOR FILING DATE: 1999-11-01
PRIOR APPLICATION NUMBER: 60/109,217
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Sequence 6
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            34.0%; Score 214; DB 3; Length 14 ilarity 37.1%; Pred. No. 1.8e-18; Conservative 29; Mismatches 30; Indels
                     US-09-314-777-3

US-09-617-302-6

US-09-617-302-6

US-09-528-436B-3

US-09-940-497-3

US-09-940-497-3

US-09-976-594-37

US-09-976-594-37

US-09-976-594-37

US-09-775-933-16

US-09-775-932-4

US-09-411-4138-5

US-09-411-4138-5

US-09-411-4138-5

US-09-411-4138-5

US-09-411-4138-5

US-09-411-4138-5
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 3, Application US/09431480 Patent No. 6235708 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
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Rank DR

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measuring human gene expression in a sample derived from human heart (see ABA21535-ABA41305). The present sequence is a protein encoded by one such probe. The probes may be used for predicting, measuring and displaying gene expression in samples derived from the human heart via microarrays. By measuring gene expression, the probes are useful for predicting, diagnosing, grading, staging, monitoring and prognosing diseases of the human heart and vascular system e.g. cardiovascular disease, hypertension, cardiac arrhythmias and congenital heart disease. Note: The sequence data for this patent did not form part of the printed at fip.wipo.int/pub/published_pct_sequences
                                                                                  Single exon nucleic acid probes for analyzing gene expression in human
                                                                                                                                                                                         The present invention relates to single exon nucleic acid probes for
                                                                                                                                             Claim 15; SEQ ID NO 21294; 530pp; English
Chen W,
  Hanzel DK,
                                        WPI; 2001-488899/53
  Penn SG,
                                                                                                         hearts
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Sequence 50 AA;

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                     Gaps
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                                         53
                                                      4 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQ
  Score 262; DB 4; Length 50;
Pred. No. 2.9e-22;
                    0; Indels
        100.0%; Prec. ...
  41.78;
          Local Similarity 100.
nes 50; Conservative
Query Match
Best Local Si
Matches 50;
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AAM67252 standard; protein; 50 AA

AAM67252;

(first entry) 06-NOV-2001

Human bone marrow expressed probe encoded protein SEQ ID NO: 27558.

Human; bone marrow expressed exon; gene expression analysis; probe; microarray; cancer; leukaemia; lymphoma; myeloma.

Homo sapiens

WO200157276-A2

09-AUG-2001

30-JAN-2001; 2001WO-US000668

04-FEB-2000; 2000US-0180312P 26-MAY-2000; 2000US-0207456P

30-JUN-2000; 2000US-00608408 03-AUG-2000; 2000US-00533466. 21-SEP-2000; 2000US-0234687P. 27-SEP-2000; 2000US-02363599. 04-OCT-2000; 2000GB-00024263.

(MOLE-) MOLECULAR DYNAMICS INC

DR; Rank Chen W, Penn SG, Hanzel DK, WPI; 2001-488900/53 Human genome-derived single exon nucleic acid probes useful for analyzing gene expression in human bone marrow.

Example 4; SEQ ID NO 27558; 658pp + Sequence Listing; English

The present invention provides a number of single exon nucleic acid probes which are derived from genomic sequences expressed in the human bone marrow. They can be used to measure gene expression in bone marrow samples, which may enable the improved diagnosis and treatment of cancers such as lymphoma, leukaemia and myeloma. The present sequence is a protein encoded by one of the probes of the invention 88888888

Sequence 50 AA;

Gaps ö Length 50; Indels ö 41.7%; Score 262; DB 4; 100.0%; Pred. No. 2.9e-22; ive 0; Mismatches 0; Query Match Best Local Similarity 100. Matches 50, Conservative

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셤 ò

Search completed: March 18, 2004, 14:14:56 Job time : 106.276 secs

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The invention relates to a spatially-addressable set of single exon nucleic acid probes for measuring gene expression in a sample derived from human breast and Br 474 cells. The method involves contacting the probes with a collection of detectably labelled nucleic acids derived from which a collection of detectably labelled nucleic acids derived fromes of the microarray. The probes are useful for verifying the expression of regions of genomic DNA predicted to encode proteins. They are useful for gene discovery, and for determining predisposition and/or assessing the toxicity of chemical agents on cells. The microarray of this invention presents a far greater diversity of probes for measuring microarrays. The method is suitable for rapid production of functional information from genomic sequence. The present sequence tag microarrays a single exon nucleic acid probe of the invention. Note: The sequence data for this patent did not form part of the printed sequence correctly from WIPO sequence in electronic format directly from WIPO at fip. wipo.int/pub/published_pct_sequences
                                                                                                                       New spatially-addressable set of single exon nucleic acid probes, useful for measuring gene expression in sample derived from human breast, comprises number of single exon nucleic acid probes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human; microarray; single exon probe; gene expression; breast; disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Peptide #1564 encoded by breast cell single exon nucleic acid probe.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQ 53
                                                                                                                                                                                           Claim 27; SEQ ID NO 15357; 327pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      41.7%; Score 262; DB 4; Length 50; 100.0%; Pred. No. 2.9e-22; ive 0; Mismatches 0; Indels
                                                   Rank DR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABB28913 standard; peptide; 50 AA
                (MOLE-) MOLECULAR DYNAMICS INC
                                                   Chen W,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (MOLE-) MOLECULAR DYNAMICS INC
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21-SEP-2000; 2000US-023468TP.
21-SEP-2000; 2000US-035359P.
04-OCT-2000; 2000GB-00024263.
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2000US-0207456P
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity 100.
es 50; Conservative
                                                   Hanzel DK,
                                                                                    WPI; 2001-496933/54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 50 AA;
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                                                   Penn SG,
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ABB28913
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The invention relates to a spatially-addressable set of single exon nucleic acid probes for measuring gene expression in a sample derived from human breast and BT 474 cells. The method involves contacting the probes with a collection of detectably labelled nucleic acids derived from mRNA of human breast, and then measuring the label bound to each probes of the microarray. The probes are useful for verifying the expression of regions of genomic DNA predicted to encode proteins. They are useful for gene discovery, and for determining predisposition and/or prognosing breast disease. Gene expression analysis is useful for assessing the toxicity of chemical agents on cells. The microarray of this invention presents a far greater diversity of probes for measuring the invention presents as usitable for rapid production of functional information from genomic sequence. The present sequence is a peptide concoded by a single exon mucleic acid probe of the invention. Note: The sequence data for this patent did not form part of the printed from WIPO
                                                                              New spatially-addressable set of single exon nucleic acid probes, useful for measuring gene expression in sample derived from human breast,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Protein #1523 encoded by probe for measuring heart cell gene expression.
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                                                                                                                                                  Claim 27; SEQ ID NO 11881; 327pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human, gene expression; heart, microarray; vascular system; cardiovascular disease; hypertension; cardiac arrhythmia; congenital heart disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 50;
                                                                                                                  comprises number of single exon nucleic acid probes.
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41.7%; Score 262; DB 4; I
Best Local Similarity 100.0%; Pred. No. 2.9e-22;
Matches 50; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ftp.wipo.int/pub/published_pct_sequences
              Rank DR;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABB19524 standard; protein; 50
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2000US-00608408.
2000US-00632366.
2000US-0234687P.
2000US-0236359P.
              Chen W,
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              Hanzel DK,
                                                WPI; 2001-496933/54.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 50 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          26-MAY-2000;
30-JUN-2000;
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              Penn SG,
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Gaps

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ABB34086

RESULT 10 ABB34086

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Human genome-derived single exon nucleic acid probes useful for analyzing
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human; microarray; single exon probe; gene expression; breast; disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Peptide #5040 encoded by breast cell single exon nucleic acid probe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQ
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Pred. No. 2.9e-22;
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100.0%; Pred. No. 2...
0; Mismatches
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                                                                                                                                                                                                                                                                                                                         Rank DR;
                                                                                                                                                                                                                                                                                                                                                                                                                 gene expression in human placenta.
                                                                                                                                                                                                                                                                                     (MOLE-) MOLECULAR DYNAMICS INC
                                                                                                                                                                                                                                                                                                                         Chen W,
                                                                                                                                                                          30-JUN-2000; 2000US-00608408.
03-AUG-2000; 2000US-00632366.
21-SEP-2000; 2000US-0234687P.
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2000US-00608408.
2000US-00632366.
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27-SEP-2000; 2000US-0236359P-
04-OCT-2000; 2000GB-00024263.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 100.
                                                                                                                                                                                                                                                                                                                         Hanzel DK,
                                                                                                                                                                                                                                                                                                                                                        WPI; 2001-488897/53
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 50 AA;
                                   WO200157272-A2
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30-JUN-2000;
03-AUG-2000;
 Homo sapiens.
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                                                                                                                                          04-FEB-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human genome-derived single exon nucleic acid probes useful for analyzing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Peptide #1582 encoded by probe for measuring placental gene expression.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                               Human; foetal liver; gene expression; single exon nucleic acid probe.
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                                                                                                                                                           encoded by human foetal liver single exon probe.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 27; SEQ ID NO 26721; 639pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RKKTFLSVHEVMAVENYAKDSLOWITDOYNKESDDKYHFRIFRULKVORO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 50;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Probe; microarray, human; placenta; antenatal diagnosis;
genetic disorder.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          41.7%; Score 262; DB 4; I
100.0%; Pred. No. 2.9e-22;
iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rank DR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene expression in human fetal liver.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ź
                                                    ABB34086 standard; peptide; 50 AA
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                                                                                                                                                                                                                                                                                                                                                                                              26-MAY-2000; 2000US-0207456P.
30-JUN-2000; 2000US-00608408.
03-AUG-2000; 2000US-0053266.
27-SEP-2000; 2000US-0234687P.
27-SEP-2000; 2000US-023458P.
04-OCT-2000; 2000GB-00024263.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chen W,
                                                                                                                                                                                                                                                                                                                                           30-JAN-2001; 2001WO-US000669
                                                                                                                         (first entry)
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                                                                                                                                                                                                                                                                      WO200157277-A2
                                                                                                                                                             Peptide #1592
                                                                                                                         04-FEB-2002
                                                                                                                                                                                                                                    Homo sapiens
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Penn SG,

20:

Best Loc Matches

Query Match

AAM27545;

AAM27545 11D AAN XX XX AA XX AD DT 17-XX XX Pri KW Pri XX YX Pri XX YX QG:

RESULT 11

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Gaps

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chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zcys8 gene. This sequence represents an antigenic peptide of human cystatin-8 (Zcys8)
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The polynucleotide encoding (I) is useful to detect and to localise the expression of a Zoy88 gene in a biological sample and Zoy88 gene in oliogical sample and Zoy88 encoding continuate to the polynucleotide probes are useful for in vivo diagnosis. The polynucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation in the Zoy88 gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zoy88 gene. This sequence represents an antigenic peptide of human cystatin-8 (Zoy88)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
                                                                                                                                                                                                    Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation; antigenic peptide.
                                                                                                                                                                                                                                             NVEMOWITCOKPETINCVPOERELHKOVNCFFSVFAVPWFEOYKILNK 110
                                                                                                                                                      Length 48;
                                                                                                                                                                                                                                                                                       NVEMOWITCOKPETINCVPOERELHKOVNCFFSVFAVPWFEOYKILNK
                                                                                                                                                                                                  0; Indels
                                                                                                                                                      43.4%; Score 273; DB 5; I
100.0%; Pred. No. 1.6e-23;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human cystatin-8 (Zcys8) antigenic fragment #11.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 2; Page 97-98; 100pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bishop PD;
                                                                                                                                                                                                                                                                                                                                                                                                AAU79863 standard; peptide; 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29-AUG-2001; 2001WO-US026868.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-SEP-2000; 2000US-0230230P.
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                                                                                                                                                                                                  48; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2002-383044/41.
                                                                                                                                                      Query Match
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                                                                                                             Sequence 48
                                                                                                                                                                                                                                                                                                                                                                                                                                           AAU79863;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The present invention relates to human single exon nucleic acid probes (SENP: see AAI10068-AAI28459). The present sequence is a peptide encoded by one such probe. The SENPS are derived from human HeLa cells. The BENPS can be used to produce a single exon microarray, which can be used for measuring human gene expression in a sample derived from human cervical epithelial cells. By measuring gene expression, the probes are therefore useful in grading and/or staging of diseases of the cervix, notably cervical cancer. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                             Peptide #1530 encoded by probe for measuring cervical gene expression.
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                                                                                                                                                                                                                                                                                                         human; microarray; gene expression; cervical epithelial cell;
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                                     Length 49;
                                                                                             DOYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPETTN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   41.7%; Score 262; DB 4; Length 50; 100.0%; Pred. No. 2.9e-22;
                                                                 Indels
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                                       Score 272; DB 5; 1
Pred. No. 2.1e-23;
                             43.2%; Scc...
100.0%; Pred. No. 2...
0; Mismatches ...
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ive 0; Mismatches
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                                                                                                                                                                                               Z
                                                                                                                                                                                             AAM15096 standard; protein; 50
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2000US-0207456P.
2000US-00608408.
2000US-00632366.
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2000US-0236359P.
2000GB-00024263.
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                                                                 Conservative
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Best Local Similarity 100.
Matches 50, Conservative
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                                                    Local Similarity
ses 49; Conserv
                                                                                                                                                                                                                                                                                                                         cervical cancer
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           Sequence 49 AA;
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03-AUG-2000;
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                                     Query Match
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Matches
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animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcy88. The antibodies are also useful to isolate large quantities of Zcy88 protein and DNA sequences that encode Zcy88 genes. The polynucleotide encoding (I) is useful to detect and to localise the expression of a Zcy88 gene in a biological sample and Zcy88 genes. Olyourcleotide probes are useful for in vivo diagnosis. The polynucleotide encoding (I) is useful for in vivo diagnosis. The polynucleotide encoding (I) is useful for in vivo diagnosis. The connecence contain a mutation in the Zcy8 gene like aneuploidy, gene chromosomes contain a mutation in the Zcy8 gene like aneuploidy, gene con number changes, instrutions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zcy88 gene. This sequence represents an antigenic peptide of human cystatin-8 (Zcy88) 888888888888888888

Sequence 59 AA;

ö Gabs ö Length 59; 0; Indels Score 334; DB 5; I Pred. No. 2.3e-30; 53.1%; Scor. 100.0%; Pred. No. 4.... '... 0; Mismatches 59; Conservative Local Similarity Query Match Matches

ROVIDHLEYHLINVEMOWTICQKPETINCVPQERELHKOVNCFFSVFAVPWFEQYKILINK 110 25 ~ 셤 8

RESULT 6

AAU79864 standard; peptide; 52

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AAU79864;

(first entry) 15-JUL-2002

Human cystatin-8 (Zcys8) antigenic fragment #12.

Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation; antigenic peptide.

Homo sapiens.

WO200220567-A2

14-MAR-2002

29-AUG-2001; 2001WO-US026868.

01-SEP-2000; 2000US-0230230P.

(ZYMO) ZYMOGENETICS INC

Bishop Gao Z, Holloway JL,

ď,

WPI; 2002-383044/41.

Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.

Claim 2; Page 98; 100pp; English

polypeptide (I). (I) is useful for: inhibiting cancer procoagulant protein in an individual and thus inhibiting cancer procoagulant associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm motility and fertilisation; and as antigenic peptides to generate antibodies. Zcys8 is useful as research reagent for characterising sites of interaction between Zcys8 and its receptor. Zcys8 is useful in enhancing fertilisation during assisted reproduction in humans and in animals. Anti-(I) antibodies are useful to screen biological samples like blood, unine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcys8. The antibodies are also useful to isolate large quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes. The invention describes an isolated mammalian cystatin-8 (2cys8)

The polynucleotide encoding (I) is useful to detect and to localise the expression of a Zcys8 gene in a biological sample and Zcys8 oligonucleotide probes are useful for in vivo diagnosis. The polynucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation in the Zcys8 gene like ansuploidy, gene copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zcys8 gene. This sequence represents an antigenic peptide of human cystatin-8 (Zcys8) 888888888

Sequence 52 AA;

Gaps ö Length 52; Indels . DB 5; I 3.4e-25; 45.8%; Score 288; DB 100.0%; Pred. No. 3.4. ive 0; Mismatches 45.8%; Query Match
Best Local Similarity luv..
Local Similarity luv..

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à 셤 RESULT 7

AAU79867 standard; peptide; 48 AA.

AAU79867;

15-JUL-2002

(first entry)

Human cystatin-8 (Zcys8) antigenic fragment #15.

Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation; antigenic peptide.

Homo sapiens.

WO200220567-A2.

14-MAR-2002.

29-AUG-2001; 2001WO-US026868

01-SEP-2000; 2000US-0230230P

(ZYMO) ZYMOGENETICS INC.

Bishop PD; Holloway JL, Gao Z,

WPI; 2002-383044/41.

Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.

Claim 2; Page 99; 100pp; English.

polypeptide (I). (I) is useful for: inhibiting cancer proceagulant protein in an individual and thus inhibiting cancer proceagulant protein in an individual and thus inhibiting cancer proceagulant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal cancing fertilisation; and as antigenic peptides to generate cantibodies. Zcys8 is useful in cancing fertilisation during assisted reproduction in humans and in animals. Anti-(I) antibodies are useful to screen biological samples like cancer and to animals. Anti-(I) antibodies are useful to screen biological samples like presence of Zcys8 protein and DNA sequences that encode Zcys8 genes. The polymucleotide encoding (I) is useful to detect and to localise the expression of a Zcys8 gene in a biological sample and Zcys8 coligonucleotide probes are useful for in vivo diagnosis. The polymucleotide encoding (I) is useful in determining whether a subject's The invention describes an isolated mammalian cystatin-8 (Zcys8)

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animals. Anti-(1) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcyse. The antibodies are also useful to isolate large quantities of Zcyse protein and DNA sequences that encode Zcyse genes. The polynucleotide encoding (1) is useful to detect and to localise the expression of a Zcyse gene in a biological sample and Zcyse genes. Olygonucleotide probes are useful for in vivo diagnosis. The polynucleotide encoding (1) is useful in determining whether a subject's chromosomes contain a mutation in the Zcyse gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zcyse gene. This is the amino acid sequence of human cystatin-8 (Zcyse)
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Sequence 137 AA;

ö 9 82 YQARKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEY YQARKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEY Gaps HLNVEMQWTTCQKPETTNCVPQERELHKQVNCFFSVFAVPWFEQYKILNKSCSSD 115 HINVEMONTICQKPETINCVPQERELHKQVNCFFSVFAVPWFEQYKILNKSCSSD 137 ö Length 137; 0; Indels 100.0%; Score 629; DB 5; 100.0%; Pred. No. 1.6e-63; 0; Mismatches Matches 115; Conservative Best Local Similarity 23 61 Query Match 셤 ò ò

AAU79865 standard; peptide; 80 AA

(first entry) 15-JUL-2002 Human cystatin-8 (Zcys8) antigenic fragment #13.

Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation; antigenic peptide.

Homo sapiens

WO200220567-A2

14-MAR-2002

29-AUG-2001; 2001WO-US026868

01-SEP-2000; 2000US-0230230P

(ZYMO) ZYMOGENETICS INC

Bishop PD; Holloway JL,

WPI; 2002-383044/41.

Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer. Claim 2; Page 98; 100pp; English.

fund viscosity, enhancing viability of cryopreserved sperm, sperm motility and fertilisation; and as antisenic peptides to generate antibodies. Zcys8 is useful as research reagent for characterising sites of interaction between Zcys8 and its receptor. Zcys8 is useful in enhancing fertilisation during assisted reproduction in humans and in The invention describes an isolated mammalian cystatin-8 (Zcys8) polypeptide (I). (I) is useful for: inhibiting cancer procoagulant protein in an individual and thus inhibiting the thrombotic events AAUT9865
AAU

animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zoys8. The antibodies are also useful to isolate large quantities of Zoys8 protein and DNA sequences that encode Zoys8 genes. The polynucleotide encoding (I) is useful to detect and to localise the expression of a Zoys8 gene in a biological sample and Zoys8 genes. Oligonucleotide probes are useful for in vivo diagnosis. The polynucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation in the Zoys8 gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zoys8 gene. This sequence represents an antigenic peptide of human cystatin-8 (Zoys8) ô 8 9 1 QYNKESDDKYHFRIFRYLKVQRQVTDHLEYHLNVEMQWTTCQKPETTNCVPQERELHKQV 31 QYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPETTNCVPQERELHKQV Gaps . 0 Length 80; 70.9%; Score 446; DB 5; I 100.0%; Pred. No. 5.8e-43; ive 0; Mismatches 0; 91 NCFFSVFAVPWFEQYKILNK 110 61 NCFFSVFAVPWFEQYKILNK 80 80; Conservative Best Local Similarity Sequence 80 AA; Query Match Matches \$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$ 8 g ò

RESULT 5 AAU79866

AAU79866 standard; peptide; 59 AA.

(first entry) 15-JUL-2002 Human cystatin-8 (Zcys8) antigenic fragment #14.

Cystatin-8; Zcy88; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation; antigenic peptide.

Homo sapiens.

WO200220567-A2

14-MAR-2002

29-AUG-2001; 2001WO-US026868

01-SEP-2000; 2000US-0230230P

(ZYMO) ZYMOGENETICS INC.

Bishop PD; Holloway JL,

WPI; 2002-383044/41.

Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.

Claim 2; Page 99; 100pp; English.

The invention describes an isolated mammalian cystatin-8 (Zcys8) polypeptide (1). (1) is useful for: inhibiting cancer procoagulant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm motility and fertilisation; and as antigenic peptides to generate antibodies. Zcys8 is useful as research reagent for characterising sites of interaction between Zcys8 and its receptor. Zcys8 is useful in enhancing fertilisation during assisted reproduction in humans and in

presence of Zcys8. The antibodies are also useful to isolate large

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quantities of Zcy88 protein and DNA sequences that encode Zcy88 genes. The polynucleotide encoding (I) is useful to detect and to localise the expression of a Zcy88 gene in a biological sample and Zcy88 oligonucleotide probes are useful for in vivo diagnosis. The polynucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation in the Zcy88 gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zcy88 gene. This sequence represents an antigenic fragment of human cystatin-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The invention describes an isolated mammalian cystatin-8 (Zcy88) polypeptide (I). (I) is useful for: inhibiting cancer procoagulant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm motility and fertilisation; and as antigenic peptides to generate antibodies. Zcy88 is useful as research reagent for characterising sites of interaction between Zcy88 and its receptor. Zcy88 is useful in enhancing fertilisation during assisted reproduction in humans and in
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                                                                                                                                                                                                                                                                                                                                                      YQARKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEY
                                                                                                                                                                                                                                                                                                                                YQARKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEY
                                                                                                                                                                                                                                                                                          Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                              HINVEMOWITCQKPETINCVPQERELHKQVNCFPSVFAVPWFEQYKILNKSCSSD 115
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation; antigenic fragment.
                                                                                                                                                                                                                                                    Length 115;
                                                                                                                                                                                                                                                                                          0; Indels
                                                                                                                                                                                                                                                  100.0%; Score 629; DB 5; 100.0%; Pred. No. 1.3e-63;
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                                                                                                                                                                                                                                                                                        0; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAU79854 standard; protein; 117 AA
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                                                                                                                                                                                                                 Sequence 115 AA;
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animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the

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            quantities of Zcy88 protein and DNA sequences that encode Zcy88 genes.

The polynucleotide encoding (I) is useful to detect and to localise the expression of a Zcy88 gene in a biological sample and Zcy88 gene in a biological sample and Zcy88 coligonucleotide probes are useful for in vivo diagnosis. The polynucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation in the Zcy88 gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zcy88 gene. This sequence represents an antigenic fragment of human cystatin-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The invention describes an isolated mammalian cystatin-8 (Zcys8) polypeptide (I). (I) is useful for: inhibiting cancer procoagulant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm motility and fertilisation; and as antigenic peptides to generate antibodies. Zcys8 is useful as research reagent for characterising sites of interaction between Zcys8 and its receptor. Zcys8 is useful in enhancing fertilisation during assisted reproduction in humans and in
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                                                                                                                                                                                                                                                                                                                                                                                     3 YQARKKTFLSVHEVMAVENYAKDSLQWITDQYNKESDDKYHFRIFRVLKVQRQVTDHLEY
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iive 0; Mismatches 0;
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Matches 115; Conservative
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                                                                                                                                                                                                                                       Sequence 117 AA;
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OM protein - protein search, using sw model

March 18, 2004, 14:02:15; Search time 104.276 Seconds (without alignments) 311.606 Million cell updates/sec Run on:

US-09-941-314-3 Title: Perfect score:

1 YQARKKIFLSVHEVMAVENY........VFAVPWFEQYKILNKSCSSD 115 Sequence:

Scoring table:

BLOSUM62 Gapop 10.0 , Gapext 0.5

1586107 Total number of hits satisfying chosen parameters: 1586107 seqs, 282547505 residues Searched:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

A_Geneseq_29Jan04:* Database

geneseqp2002s:* geneseqp2003as:* geneseqp2003bs:* geneseqp2004s:* geneseqp1980s:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

		Description	Aau79853 Human cys	Aau79854 Human cys	Human	Aau79865 Human cys	Aau79866 Human cys	Aau79864 Human cys	Aau79867 Human cys	Human	Aam15096 Peptide #		Aam27545 Peptide #		Abb28913 Peptide #	Abb19524 Protein #	Aam67252 Human bon	Aam54871 Human bra	Abg48915 Human liv	Aam02833 Peptide #	Abg36903 Human pep	Aau79860 Human cys	Aae02404 Murine cy	Aae04433 Mouse cys	Mouse	Add46708 Rat Prote	Add46704 Rat Prote
SUMMARIES		ID	AAU79853	AAU79854	AAU79852	AAU79865	AAU79866	AAU79864	AAU79867	AAU79863	AAM15096	ABB34086	AAM27545	ABB32389	ABB28913	ABB19524	AAM67252	AAM54871	ABG48915	AAM02833	ABG36903	AAU79860	AAE02404	AAE04433	ADA14374	ADD46708	ADD46704
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ALIGNMENTS

Cystatin-8; Zcy88; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation; antigenic fragment. Human cystatin-8 (Zcys8) antigenic fragment #1. AAU79853 standard; protein; 115 AA. (first entry) 15-JUL-2002 AAU79853; RESULT 1

Homo sapiens

WO200220567-A2.

14-MAR-2002.

29-AUG-2001; 2001WO-US026868.

01-SEP-2000; 2000US-0230230P.

(ZYMO) ZYMOGENETICS INC.

Bishop PD; Holloway JL, Gao Z,

WPI; 2002-383044/41.

Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.

Claim 2; Page 94; 100pp; English.

The invention describes an isolated mammalian cystatin-8 (Zcys8) polypeptide (1). (1) is useful for: inhibiting cancer procoagulant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm motility and fertilisation; and as antigenic peptides to generate antibodies. Zcys8 is useful as research reagent for characterising sites of interaction between Zcys8 and its receptor. Zcys8 is useful in enhancing fertilisation during assisted reproduction in humans and in animals. Anti-(1) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcys8. The antibodies are also useful to isolate large

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    SwissProt_42:*
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update) n update) n update) n update) n update; Buteleostomi; chini; Vertebrata; Buteleostomi; chini; Hominidae; Homo. J., Burton J., Gilbert J.G.R., Babage A.K., Bagguley C.L., Beard L.M., Beare D.M., Carder C., Carter N.P., Carder C., Carter N.P., Carder C., Carter N.P., Carder C., Clark S.Y., Clee C.M., Connor R.E., Corby N.R., Dhami P.D., Dunn M., Ho S., Holden J.L., Howden P.J., cosch K., Johnson C.M., Johnson D., Knights A., Laird G.K., Lawlor S., Cosch K., Johnson C.M., Johnson D., Cosch K., Johnson C.M., Johnson D., Cosch K., Johnson D., Cosch K., Johnson C.M., Johnson D., Cosch K., J	p36004 saccharomyc p37869 bacillus su p3036 lymantria d Q98967 oncorhynchu Q91195 oncorhynchu Q920h6 mus musculu p52469 human herpe p49034 alnus gluti Q41608 tulipa gesn p17569 cucurbita m p54279 mus musculu p22853 bacillus ce

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XX Kawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,
XX Kawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,
XX Arakawa T., Hara A., Fukunishi Y., Konno H., Kando S., Yamanaka I.,
XX Alawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
XX Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
XX Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
XX Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
XX Kushi P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
XX Kushi P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
XX Kushi P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
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XX Kushi P., Jewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
XX Kushi P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
XX Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
XX Blake J., Boffelli D., Bojunga N., Carninci P., de:Bonaldo M.F.,
XX Blake J., Boffelli D., Hofmann M., Hume D.A., Kaniya M., Lee N.H.,
XX Gustincich S., Hill D., Hofmann M., Hume D.A., Kaniya M., Lee N.H.,
XX Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,
XX Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
XX Sasaki H., Sato K., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
XX Hayashiyaki H., Toyo-oka K., Wang K.H., Weitz C., Whittaker C., Wilming L.,
XX Hayashiyaki Y., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
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(Rel. 41,
(Rel. 42,
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                 Belongs to the cystatin family.
                                 LOCATION: Secreted (Potential)
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Rodentia;
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POTENTIAL.
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SECONDARY AREA OF CON
BY SIMILARITY.
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Missing (in isoform 2
/FIId=VSP 001260.
W; C585C8C39A585C3B CF
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Pred. No. 1.1e-14;
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                  Deloukas P., Matthews L.H., Ashurst J., Burton J., Gilbert J.G.R.,
Jones M., Stavrides G., Almedda J.P., Babbage A.K., Bagguley C.L.,
Ra Bailey J., Barlow K.F., Bates K.N., Beard L.M., Beare D.M.,
Ra Beasley O.P., Bird C.P., Blakey S.E., Bridgeman A.M., Brown A.J.,
Beasley O.P., Bird C.P., Blakey S.E., Bridgeman A.M., Brown A.J.,
Buck D., Burrill W.D., Butler R.P., Carder C., Carter N.P.,
Chapman J.C., Clamp M., Clark G., Clark L.N., Clark S.Y., Clee C.M.,
Chegg S., Cobley V.E., Collier R.E., Connor R.E., Corby N.R.,
Coulson A., Coville G.J., Deadman R., Dhami p.D., Dunn M.,
Ellington A.G., Frankland J.A., Fraser A., French L., Garner P.,
A. Hallington A.G., Frankland J.A., Fraser A., French L., Garner P.,
A. Hammond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J.,
A. Huckle E., Hunt A.R., Hath F.D., Ho S., Holden J.L., Howden P.J.,
A. Huckle E., Hunt A.R., King A., Knights A., Laird G. K., Lawlor S.,
A. March W.F., Kimberley A.M., King A., Knights A., Laird G. K., Lawlor S.,
A. March W.F., Kimberley A.M., King A., Knights A., Laird G. K., Lawlor S.,
A. March W.F., Kimberley A.M., King A., Knights A., Laird G. K., Lawlor S.,
A. March W.F., Kimberley A.M., King A., Laird G., Lavell J.D.,
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30-MAY-2000
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DISULFID
CARBOHYD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cornwall G.A., Hann S.R.; "Transient appearance of CRES protein caput epididymal sperm maturation.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa;
Mammalia; Eutheria;
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SMART; SM00043; CY; 1.
PROSITE; PS00287; CYSTATI
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HSSP; P01034; 1G96
MGD; MGI:1925490;
                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=21638749; PubMed=11780052;
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InterPro; IPR000010; Cy:
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(Rel. 39, Last sequence up
(Rel. 41, Last annotation
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61.5%;
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Pred. No.
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SECONDARY AREA OF CONTACT (POTENTIAL)
BY SIMILARITY.
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     McLay K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         spermatogenesis
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Best Local S
Matches 14
                                                 01-OCT-1993 (Rel. 27, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Cystatin-related epididymal spermatogenic protein prelated epididymal specific protein) (Cystatin 8).
CST8 OC CRES.
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P32766; O89102;
01-OCT-1993 (Re
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CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Milne S.A., Mistry D., Moore M.J.F., Mullikin J.C., Nickerson T., Oliver K., Parker A., Patel R., Pearce T.A.V., Peck A.I., Phillimore B.J.C.T., Prathalingam S.R., Plumb R.W., Ramsay H., Rice C.M., Ross M.T., Scott C.E., Sehra H.K., Shownkeen R., Sims S., Skuce C.D., Smith M.L., Soderlund C., Steward C.A., Sulston J.E., Skuce C.D., Smith M.L., Soderlund C., Tee L., Thomas D.W., Thorpe A., Swann R.M., Sycamore N., Taylor R., Tee L., Thomas D.W., Thorpe A., Tracey A., Tromans A.C., Vaudin M., Wallis J.M., Whitehead S.L., Whittaker P., Willey D.L., Williams L., Williams S.A., Wilming L., Wray P.W., Hubbard T., Durbin R.M., Bentley D.R., Beck S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; AF059244; AAC
EMBL; AL109954; CAE
HSSP; P01034; 1G96.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatice Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
              Bukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                      MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Thiol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Genew; HGNC:2480; CST8.
GO; GO:0004869; F:cysteine pro
InterPro; IPR000010; Cystatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nature 414:865-871(2001)
                                           Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SMART;
                                                                                                                                                                                                                                                                                                                                                                         VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "The DNA sequence and comparative analysis of human chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 exclusively synthesized by the proximal cap SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TISSUE SPECIFICITY: Proximal caput region of the epididymis. expression in the testis. Within the testis it is localized elongating spermatids, whereas within the epididymis it is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUBCELLULAR LOCATION: TISSUE SPECIFICITY: PI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    pF00031; cystatin; 1.; SM00043; CY; 1. protease inhibitor; S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AF059244; AAC14707.1; -. AL109954; CAB64234.1; -.
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                                                                                                                                                                                                                               EYNKESEDKYVFLVVKTLQAQLQVIN
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             Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                             16275
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Secreted.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Signal; Polymorphism.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protease inhibitor activity;
                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                 SECONDARY AREA OF (BY SIMILARITY.
BY SIMILARITY.
N-LINKED (GLCNAC.
                                                                                                                                                                                                                                                                                                   Score 77;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                    N-LINKED (GLCNAC. ..)
N-LINKED (GLCNAC. ..)
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A -> P (in dbSNP:1054633).
/FTId=VAR 014527.
9A3512757E0F4ECD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CYSTATIN-RELATED EPIDIDYMAL SPERMATOGENIC
             Craniata; Vertebrata;
Sciurognathi; Muridae;
                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                      Mismatches
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              Muridae;
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                                                                                                                                                                                                                                                                                                               Length 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                CONTACT
                                                                                 precursor
                                                                                                                                                                                                                                                                                      Indels
                            Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                        (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                      (POTENTIAL)
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             Murinae; Mus.
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                                                                                   (Cystatin-
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to the
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RESULT 5
CYTC RABIT
ID CYTC RABIT
AC 097862;
DT 16-0CT-2001
DT 16-0CT-2001

097862; 16-OCT-2001 16-OCT-2001

(Rel. 40, Created) (Rel. 40, Last seq STANDARD;

sequence

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                                                     Matches
                                                                Query Match
Best Local
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DISULFID
CARBOHYD
                                                                                                         SEQUENCE
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SMART; SM00043; CY; 1.
Thiol protease inhibitor; Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                  the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for con
                                                                                                                                                                                                                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a between the Swiss Institute of Bioinformatics and the EMBI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                family is highly restricted in its expression of the mouse epididymis.";
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=99247899; PubMed=10229662; Cornwall G.A., Hsia N., Sutton H.G
                                                                                                                                                                                                                                                                                                             HSSP;
                                                                                                                                                                                                                                                                                                                        EMBL; AF091503; AAC61754.:

EMBL; AF090691; AAC36316.:

EMBL; S49926; AAC35390.1;

PIR; A45361; A45361.
                                                                                                                                                                                                                                                                                                                                                                                            or send
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=93078799; PubMed=1280328;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE=Epididymie;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN=C3H,
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                                                                                                                       CONFLICT
                                                                                                                                  CARBOHYD
                                                                                                                                                                                                                  CHAIN
                                                                                                                                                                                                                              SIGNAL
                                                                                                                                                                                                                                                                   Pfam; PF00031
                                                                                                                                                                                                                                                                                               WGD; MGI:107161; Cst8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -!- FUNCTION: Performs a specialized role during
                                                                                                                                                                                                                                                                                    interPro; IPR000010;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE SPECIFICITY: Proximal caput region of the epididyn expression in the testis. Within the testis it is locally elongating spermatide, whereas within the epididynis it is exclusively synthesized by the proximal caput epithelium. INDUCTION: Testicular factors or hormones other than andrapresent in the testicular fluid may be involved in the reof CRES gene expression.

SIMILARITY: Belongs to the cystatin family.
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TISSUE SPECIFICITY: Proximal ca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            maturation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Endocrinol. 6:1653-1664(1992).
55
                                                                                                                                                                                                                                                                                                            P01034; 1G96.
                         N
                                                   l Similarity
                                                                                                                                                                                                                                                                                                                                                                                            s requires a license agreement (S an email to license@isb-sib.ch).
                         QYNKESDDKYHFRIFRVLKVQRQVTD
EYNKESEDKYVFLVDKI LHAKLQITD
                                                                                                       142 AA;
                                                                                                                                               77
95
119
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                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                    AAC61754.1; -.
AAC36316.1; -.
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105
139
39
100
                                                                                                          16288
                                                               53.1%;
                                                                                                                                                                                                                                                                                    Cystatin.
                                                                                                         ¥
                                                  Pred. No. 0.007; Mismatches
                                                                                                      N-LINKED (GLCNAC. . .) (POTENTIAL N-LINKED (GLCNAC. . . .) (POTENTIAL PLMLSLILFIIP -> GTRDEGVGESQK (IN 50B446E98F66673E CRC64;
                                                                                                                                                           SECONDARY AREA OF
BY SIMILARITY.
BY SIMILARITY.
                                                                             Score 76;
                                                                                                                                                                                                                  CYSTATIN-RELATED EPIDIDYMAL SPERMATOGENIC
                                                                                                                                                                                                     PROTEIN
                                                                                                                                                                                                                              POTENTIAL.
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                                                                              BB
                                                                   00016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S.R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
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                                                                             Length 142;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              related
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                                                                                                                                   (POTENTIAL).
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he regulation
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                                                                                                                       REF.
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RESULT
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Best Local S
Matches 11
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P01038;
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ACT SITE
SITE
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                                              SEQUENCE FROM N.A.
MEDLINE=9000873; PubMed=2793849;
MEDLINE=90008873; PubMed=2793849;
Colella R., Sakaguchi Y., Nagase H., Bi
"Chicken egg white cystatin. Molecular
and tissue distribution.";
                                                                                                                                                                                                  Cystatin precursor (Egg-white cystatin)
Gallus gallus (Chicken).
Eukaryota; Metazoa; Chordata; Craniata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
PROSITE; PS00287; CYSTATIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the E the European Bioinformatics Institute. There are no rest use by non-profit institutions as long as its content modified and this statement is not removed. Usage by an entities requires a license agreement (See http://www.isb-or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                     21-JUL-1986
01-OCT-1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; AB009342; BAA75921.1; -. HSSP; P01034; 1G96.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              method involving the preparation of Genes Cells 3:459-475(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Kawashima H.;
"Large scale isolation of osteoclast-specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Oryctolagus cuniculus (Rabbit).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
   SEQUENCE OF 24-139
                                                                                                                                                                                     Archosauria;
                                                                                                                                                                                                                                                        28-FEB-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -!- FUNCTION: This is a thiol proteinase inhibitor.
-!- SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN=Japanese white; TISSUE=Bone; MEDLINE=98424349; PubMed=9753427;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cystatin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28-FEB-2003 (Rel. 41,
                             tissue disc
Biol. Chem.
                                  Biol.
                                                                                                                                                     TaxID=9031;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protease inhibitor;
                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                        N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                     QYNKESDDKYHFRIFRYLKVQRQV 25
                                                                                                                                                                                                                                                                                                                                                                                                         EYNKGSNDRYHSRALQVVRARRQI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IPR000010; Cystatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ikeda Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           148 AA;
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(Rel. 12, Last sequence update)
(Rel. 41, Last annotation updat
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                                                                                                                                                                                   Aves; Neognathae;
                                                                                                                                                                                                                                                                                                                       STANDARD;
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148
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Neognathae; Galliformes; Phasianidae; Phasianinae;
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CYSTATIN C.
REACTIVE SITE.
SECONDARY AREA C
BY SIMILARITY.
BY SIMILARITY.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 70;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Kato M., Kumegawa M., Nojima
                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1523C831169E5B9A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
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                                                                                 Bird J.W.C.;
                                                                                                                                                                                                                                                                                                                       139
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                                                                                                                                                                                                                                                     update)
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subtracted cDNA library.";
                                                                cloning,
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                                                                   nucleotide
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                                                                  sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
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PDB; 1A90;

; 31-JAN-94. ; 27-MAY-98. ; 17-JUN-98. IPR000010;

cystatin;
; CY; 1.

A34456; UDCH

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Dickmann T., Mitschang L., Hofmann M., Kos J., Turk V.,
Auerswald E.A., Jeanicke R., Oschkinat H.;
"The structures of native phosphorylated chicken cystatin and of a
recombinant unphosphorylated variant in solution.";
J. Mol. Biol. 234:1048-1059(1993).
-I- FUNCTION: This protein binds tightly to and inhibits a variety
thiol proteases including ficin, papain, and cathepsins B, C, H
and L. Although isolated from egg white, it is also present in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Brzin J., Kos J., Turk V.; "The 2.0 A X-ray crystal structure of chicken egg white cystatin its possible mode of interaction with cysteine proteinases."; EMBO J. 7:2593-2599(1988).
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SEQUENCE OF 24-139.
MEDLINE=84110059; PubMed=6662498;
MEDLINE=84110059; PubMed=6662498;
                                             This SWISS-PROT entry is copyright. It is produced through a collab between the Swiss institute of Bioinformatics and the EMBL outst the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for comentities requires a license agreement (See http://www.isb-sib.ch/ar or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE=89052676; PubMed=3191914; Bode W., Engh R., Musil D., Thiele Brzin J., Kos J., Turk V.;
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purification from egg white, characterization, and dete
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Sunter D.C., Barrett A.J
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Hoppe-Seyler's Z. Physiol. Chem. 364:1487-1496(1983)
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"Cystatin. Amino acid sequence and
Biochem. J. 217:813-817(1984).
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                                                                                                                                                                                                                                                        SIMILARITY: Belongs to the cystatin family.
J05077;
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AAA48744.1;
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s of human cystatin C
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d possible secondary structure.";
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1 01-MAR-1989 (Rel. 10, Created)

T 01-MAR-1989 (Rel. 10, Last sequence update)

T 028-FEB-2003 (Rel. 41, Last annotation update)

Catatin SA precursor (Cystatin S5).
     Deloukas P., Matthews L.H., Ashurst J., Burton J., Gilbert J.G.R.,
Jones M., Stavrides G., Almeida J.P., Babbage A.K., Bagguley C.L.,
Railey J., Barlow K.F., Bates K.N., Beard L.M., Beare D.M.,
Railey J., Barlow K.F., Bates K.N., Beard L.M., Beare D.M.,
Baley O.P., Bird C.P., Blakey S.B., Bridgeman A.M., Brown A.J.,
Beasley O.P., Bird C.P., Blakey S.B., Bridgeman A.M., Brown A.J.,
Can Buck D., Burrill W.D., Butler A.P., Carder C., Carter N.P.,
Chapman J.C., Clamp M., Clark G., Clark L.N., Clark S.Y., Clee C.M.,
Chapman J.C., Clamp M., Clark G., Connor R.E., Corby N.R.,
Coulson A., Coville G.J., Deadman R., Dhami P.D., Dunn M.,
Ellington A.G., Frankland J.A., Fraser A., French L., Garner P.,
Carffinham D.V., Griffiths C., Griffiths M.N.D., Gwilliam R., Hall R.B.,
Hammond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J.,
Hammond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J.,
Hauckle E., Hunt A.R., Hunt S.B., Jekosch K., Johnson C.M., Johnson S.,
Kay M.P., Kimberley A.M., King A., Knights A., Laird G.K., Lawlor S.,
Kay M.P., Kimberley A.M., King A., Knights A., Laird G.K., Lawlor S.,
Marsh V.L., Martin S.L., McConnachie L.J., McLay K., McMurray A.A.,
Milne S.A., Misterv D., Moore M. T.F. Mnillikh T.C., Willerson T.
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PROSITE; PS00287; CYSTATIN; 1.
Thiol protease inhibitor
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                SIGNAL
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HSSP; P01034; 1G96.
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EMBL; M19671; AAA36116.1; JI
EMBL; M19672; AAA36116.1; JI
EMBL; AL591074; CAC94784.1;
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(In) Turk V. (eds.);
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MEDLINE=88139220; PubMed=3436950;
                                                                                Pfam; PF00031; cystatin;
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 CYSTATIN
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Isemura S., Saitch E., Sanada K., Minakata K.;
"Identification of full-sized forms of salivary (S-type) cystatins (cystatin SN, cystatin SA, cystatin S, and two phosphorylated forms of cystatin S) in human whole saliva and determination of phosphorylation sites of cystatin S.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Oliver K., Parker A., Patel R., Pearce T.A.V., Peck A.I., Phillimore B.J.C.T., Prathalingam S.R., Plumb R.W., Ramsay H., Rice C.M., Ross M.T., Scott C.B., Sehra H.K., Shownkeen R., Sims Skuce C.D., Smith M.L., Soderlund C., Steward C.A., Sulston J.B., Swann R.M., Sycamore N., Taylor R., Tee L., Thomas D.W., Thorpe A Swann R.M., Sycamore N., Taylor R., Tee L., Thomas D.W., Thorpe A Tracey A., Tromans A.C., Vaudin M., Wallis J.M., Wallis J.M., Whittaker P., Willey D.L., Williams L., Williams Whittaker P., Willey D.L., Williams L., Becker B., Williams L., Willi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Bh the European Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content modified and this statement is not removed. Usage by and entities requires a license agreement (See http://www.isb-or send an email to license@isb-sib.ch).
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Biol. Chem. Hoppe-Seyler 369:191-197(1988).
-I-FUNCTIO: Thiol protease inhibitor.
-I- SUBCELLULAR LOCATION: Secreted.
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"Characterization and amino acid sequence of a new acidic cysteine proteinase inhibitor (cystatin SA) structurally closely related to cystatin S, from human whole saliva.";
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Walter de Gruyter, Berlin and New York (1986).
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"The DNA sequence and comparative analysis of human chromosome 20.";
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InterPro; IPR000010; Cystatin.

    SIMILARITY: Belongs to the cystatin family.

Signal; Multigene family
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 SEQUENCE FROM N.A.
MEDLINE=21638749; Publ
Deloukas P., Matthews
                                                                   Dickinson D.P., "Acquisition of epithelial cell
                                                                                                                                                        MEDLINE=89350949; PubMed=2764935; Saitoh E., Sabatini L.M., Eddy R.L., Isemura S., Sanada K.;
                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=87219149; PubMed=3495457;
Abrahamson M., Grubb A., Olafsson I., Lundwall A.;
Problecular cloning and sequence analysis of cDNA coding for the precursor of the human cysteine proteinase inhibitor cystatin C.";
FEBS Lett. 216:229-233(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21-UUL-1986 (Rel. 01, Created)
01-AUG-1988 (Rel. 02, Last sequence update)
10-CCT-2003 (Rel. 42, Last annotation update)
Cystatin C precursor (Neuroendocrine basic polypeptide) (Gamma-trace)
                                                                                                                                                                                                                                        Levy E., Lopez-Otin C., Ghiso J., G"Stroke in Icelandic patients with related to a mutation in the cystat
                                                                                                                                                                                                                                                                                                                      Jensson O., Grubb A.; "Structure and expression of the human cystatin C gene."; Biochem. J. 268:287-294(1990).
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s with hereditary
cystatin C gene,
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RX Strausberg R.L., Peingold E.A., Grouse L.H., Derge J.G.,

RX Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,

RX Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,

RX Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

RX Altschul S.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,

RX Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,

RX Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,

RX Hopkins R.F., Jordan K., Fermer A.A., Rubin G.M., Hong L.,

RX Hopkins R.F., Jordan K., Fermer A.A., Rubin G.M., Hong L.,

RX Hopkins R.F., Jordan H., Moore T., Max S., Carninci P., Prange C.,

RX Hopkins R.F., Jordan R.B., Toshiyuki S., Carninci P., Prange C.,

RX Hownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,

RX Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,

RX Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

RX Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

RX Villalon D.K., Muzny D.M., Sodergren B.J., Lu X., Gibbs R.A.,

RX Villalon D.K., Muzny D.M., Sodergren B.J., Lu X., Gibbs R.A.,

RX Rahey J., Helton B., Ketteman M., Madan A., Rodrigues S., Sanchez A.,

RX Halterfield Y.S.N., Krzywinski M.I., Schmutz J., Myers R.M.,

RX Hopkins R.M., Schmerb A., Schein J.E., Jones S.J.M., Marra M.A.,

RX Hopkins R.A., Schein J.E., Jones S.J.M., Marra M.A.,

RX Hopkins R.A., Schein J.E., Jones S.J.M., Marra M.A.,

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RA Bailey J., Barlow K.F., Bates K.N., Beard L.M., Beare D.M.,
RA Beasley O.P., Bird C.P., Blakey S.E., Bridgeman A.M., Brown A.J.,
RA Beasley O.P., Burill W.D., Butler A.P., Carder C., Carter N.P.,
RA Chegy S., Cobley V.E., Collier R.E., Connor R.E., Corby N.R.,
Collson A., Coville G.J., Deadman R., Dhami P.D., Dunn M.,
RA Culson A., Coville G.J., Deadman R., Dhami P.D., Dunn M.,
RA Ellington A.G., Frankland J.A., Fraser A., French L., Garner P.,
RA Grafham D.V., Griffiths C., Griffiths M.D., Gwilliam R. Hall R.E.,
RA Hammond S., Harley J.L., Heath P.D., Ho S., Holden J.J., Howden P.J.,
RA Hammond S., Harley J.L., Heath P.D., Ho S., Holden J.J., Howden P.J.,
RA Kay M.P., Kimberley A.M., King A., Knights A., Laird G.K., Lawlor S.,
RA Kay M.P., Kimberley A.M., King A., Knights A., Laird G.K., Lawlor S.,
RA Marsh V.L., Martin S.L., McConnachie L.J., McLay K., McMurray A.A.,
RA Milne S.A., Mistry D., Moore M.J.F., Mullikin J.C., Nickerson T.,
RA Oliver K., Parker A., Patel R., Pearce T.A. V., Peck A.I.,
RA Rice C.D., Smith M.L., Soderlund S.R., Shownkeen R., Sims S.,
RA Swann R.M., Sycamore N., Taylor R., Tee L., Thomas D.M., Thorbe A.,
RA Swann R.M., Sycamore N., Taylor R., Tee L., Thomas D.M., Thorbe A.,
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"The DNA sequence and comp
Nature 414:865-871(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Skuce C.D., Smith M.L., Soderiuma C., Scann R.M., Sycamore N., Taylor R., Tee L., Thomas D.W., Thorpe A Tracey A., Tromans A.C., Vaudin M., Walli M., Walliams J.M., Whitehead S.L., Whittaker P., Willey D.L., Williams L., Williams Willey D.R., Bec Wilming L., Wray P.W., Hubbard T., Durbin R.M., Bentley D.R., Bec
                                                                                             MEDLINE=84128015;
Brzin J., Popovic
                                                                                                                                                                                          "Protein inhibitors of cysteine proteinases. of cystatin from chicken egg white."; Hoppe-Seyler's Z. Physiol. Chem. 364:1487-149
                                                                                                                                                                                                                                                                                                                                                                                              "Human gamma-trace, a basic micy presence in the adenohypophysis Proc. Natl. Acad. Sci. U.S.A. 79
                                                                                                                                                                                                                                                                                                                                                                                                                                          Grubb A., Loefberg H.; "Human gamma-trace, a basic microprotein: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.; "Generation and initial analysis of more than 15,000 human and mouse cDNA sequences."; proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
                                                 Biochem.
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                                           protein inhibitor of cysteine Commun. 118:103-109(1984).
                                                                                                                                                                                                                                                                                                                                                                                                 79:3024-3027 (1982)
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Abrahamson M., Jonsdottir S., Olafason I., Jensson O., Grubb A.;
"Hereditary cystatin C amyloid angiopathy: identification of the disease-causing mutation and specific diagnosis by polymerase chain reaction based analysis.";
Hum. Genet. 89:377-380(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Human cystatin C, an amyloidogenic three-dimensional domain swapping."; Nat. Struct. Biol. 8:316-320(2001).
                                                                                                                                                                          Pfam; PF00031; cystatin; 1. SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                         Genew; HGNC:2475; CST3.
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                                                                                                                                               Thiol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Janowski R., Kozak M., Jankowska E.,
Abrahamson M., Jaskolski M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cystatin."
                                                                                                                                                                PROSITE; PS00287;
                                                                                                                                                                                                              InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -!- FUNCTION: As an inhibitor of cysteine proteinases, this protein thought to serve an important physiological role as a local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VARIANT GLN-94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Grubb A., Loefberg H., E
"The disulphide bridges
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUBUNIT: Homodimer.

TISSUE SPECIFICITY: Expressed in highest levels in the epididymis vas deferens, brain, thymus, and ovary and the lowest in the submandibular gland.

DISEASE: Defects in CST3 are a cause of hareditary cerebral hemorrhage with amyloidosis (HCHWA) [MIM:105150]; also known as cerebral amyloid angiopathy (CAA) or cerebrarial amyloidosis Icelandic type. HCHWA is characterized by a thickening of the cerebral arteries walls with deposition of material with the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     characteristics of amyloid.
SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   thought to serve an important phys regulator of this enzyme activity.
                                                                                                                                                                                                                                                                            1G96;
                                                                                                                                                                                                                                                                                             S10216; UDHU.
                                                                                                                                             protease inhibitor;
                                                                                                                                                                                                              IPR000010; Cystatin.
                                                                                                                                                                                                                                                                          06-APR-01.
                              n; 3D-structure.

1 26

27 146

37 37

81 85

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123 143
                                                                                                                                                             CYSTATIN; 1.
45.5%;
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                                                                                                                                             Amyloid; Signal; Disease mutation
 Score 65;
                                                              CYSTATIN C.
REACTIVE SITE.
SECONDARY AREA OF CONTACT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein, dimerizes through
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Length 146;
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RESULT 9
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ID CYTC MACMU
ID 019072
DT 15-JUL
DT 28-FEB
DE CYSTA:
GN CST3:
OS MACACA
OC ENCAPT
OC CETCOP
OX MEDLIN
RA Weil
RT "Cysta
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CC -!- FU
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RESULT 10
CYTC SAISC
ID CYTC S
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Best Local
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019093;
15-JUL-1998
15-JUL-1998
28-FEB-2003
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DISULFID
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                          CHAIN
ACT_SITE
SITE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pfam; PF00031; cystatin; SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; U51912; AAB64050.1; -. HSSP; P01034; 1G96.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Wei L.H., Walker L.C., Levy B.; "Cystatin C. Icelandic-like mutation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Macaca mulatta (Rhesus macaque)
Eukaryota; Metazoa; Chordata; C
Mammalia; Eutheria; Primates; C
Cercopithecinae; Macaca.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Stroke 27:2080-2085(1996)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=97054523; PubMed=8898820;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tities requires a license agreement (S send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         thought to serve an important physiological role at regulator of this enzyme activity.
                                                                                      SAISC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protease inhibitor;
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                                                                                                                                                                                                                                                                                                          Similarity
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(Rel. 36, Created)
(Rel. 36, Last sequence update)
(Rel. 41, Last annotation updat
                                                                                                                                                                                                                                                                                   Conservative
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                                                                                        STANDARD;
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BY SIMILARITY.
CYSTATIN C.
REACTIVE SITE.
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Pred. No. 0.00
8; Mismatches
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8; Mismatches
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BY SIMILARITY.
BY SIMILARITY.
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                                                                                        PRT;
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0.0077;
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RESULT
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Best Local S
Matches 10
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CYT_COTJA
P81061;
15-JUL-1998
                                                                                                                                                                                                                 26-0-2-10-3 (Rel. 41, 22-10) (Rel. 41, 22-10) (Rel. 41, 22-10) (Ref. 41, 2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACT_SITE
                               TISSUE=Egg white;
MEDLINE=97420480; PubMed=9276465;
Gerhartz B., Engh R.A., Mentele R., Eckerskorn C., Torquato R.,
Wittman J., Kolb H.J., Machleidt W., Fritz H., Auerswald E.A.;
"Quail cystatin: isolation and characterisation of a new member of
the cystatin family and its hypothetical interaction with cathepsir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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CST3.
  FEBS
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                                                                                                                                                                         SEQUENCE
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28-FEB-2003
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=97054523; PubMed=8898820; Wei L.H., Walker L.C., Levy E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mammalia; Eutheria;
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  Lett.
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  412:551-558 (1997).
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(Rel. 41, Last annotation
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                                                                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
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Da; Chordata; Craniata; Vertebrata; Euteleostomi;
ia; Primates; Platyrrhini; Cebidae; Cebinae; Saimiri.
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EY SIMILARITY.

CYSTATIN C.

REACTIVE SITE.

SECONDARY AREA OF CONTACT.

BY SIMILARITY.

BY SIMILARITY.
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Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  08196353C0306AA3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                    update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                  116
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0.0077;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 146;
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a local
                                                                                                                                                                                                                                                             Phasianinae;
                                        cathepsin
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RESULT 12
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Best Local &
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 SITE
DISULFID
DISULFID
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CST8 RAT STANDARD; PRT; 142 AA. 089969;
30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DISULFID DISULFID
                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Entropean Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content use by non-profit institutions as long as its content modified and this statement is not removed. Usage by and modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                    Cornwall G.A., Hsia N., Sutton H.G.;
"Structure, alternative splicing and chromosomal localization cystatin-related epididymal spermatogenic gene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SMART; SM00043; CY; 1.
PROSITE; PS00287; CYSTATIN
Thiol protease inhibitor;
                                                                               Pfam; PF00031; cystatin; 1
SMART; SM00043; CY; 1.
Thiol protease inhibitor;
                                                                                                         InterPro; IPR Pfam; PF00031
                                                                                                                               EMBL; AF090692; AAC36317.1; -. HSSP; P01034; 1G96.
                                                                                                                                                                  or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                             Biochem. J.
                                                                                                                                                                                                                                                                                                                                                          STRAIN=Sprague-Dawley; TISSUE=Epididymis; MEDLINE=99247899; PubMed=10229662;
                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                           Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Cystatin-related epididymal spermatogenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam; PF00031; cystatin; SMART; SM00043; CY; 1.
                                                                         SIGNAL
                                                                                                                                                                               entities requires a license agreement
                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       CST8 OR CRES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR000010; Cystatin.
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    -!- SIMILĀRITY: Belongs to

                                                           CHAIN
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                                                                                                                                                                                                                                                               -!- SIMILARITY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ·!- FUNCTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ol protease
_SITE
                                                                                                                                                                                                                                                                          maturation.
SUBCELLULAR LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cathepsin
                                                                                                                                                                                                                                                                                                   FUNCTION: Performs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2 QYNKESDDKYHFRIFRVLKVQRQV 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EYNKASNDKYSSRVVRIISAKQQL 54
                                                                                                                     IPR000010; Cystatin.
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71
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119
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Α,
                                                                                                                                                                                                                                                               Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                           (Rat).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CYSTATIN; 1.
  105
139
100
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                                                                                                                                                                                                                                                                                                                                                                                                                   Chordata;
Rodentia;
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81
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41.7%;
                                                                                                                                                                                                                                                                                                  specialized role
                                                                                   Signal
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PROTEIN.
SECONDARY AREA OF C
BY SIMILARITY.
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N-LINKED (GLCNAC.
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7:
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Pred. No.
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                                                             CYSTATIN-RELATED EPIDIDYMAL SPERMATOGENIC
                                                                         POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                   Craniata; Vertebrata;
Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            48248621053A2F70 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                               (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0.0085;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1;
                                                                                                                                                                                                                                                                                                during sperm
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                                       CONTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           inhibits papain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            precursor (Cystatin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                     Euteleostomi;
; Murinae; Rat
                                                                                                                                                                                                                 restrictions
                                       (POTENTIAL)
                                                                                                                                                                                           and
                                                                                                                                                                                                                             EMBL
                                                                                                                                                                                                                              a collaboration - MBL outstation
                                                                                                                                                                                           for
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Matches
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CYTC RAT
                                                                                                                                                                                                                                                                                                                             SEQUENCE OF 8-49.

MEDLINE-88313020; PubMed=3044831;
Esnard A., Esnard F., Faucher D., Gaut
"Two rat homologues of human cystatin
FEBS Lett. 236:475-478 (1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=90092122; PubMed=2689174; Cole T., Dickson P.W., Esnard F., Averill F., Risbridger G., Gauthier F., Schreiber G.; The CDNA structure and expression analysis of the genes for the cysteine proteinase inhibitor cystatin C and for beta 2-microglob
EMBL; X16957; CAA34831.1;
PIR; S07085; S07085.
PIR; S10587; S10587.
                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on it use by non-profit institutions as long as its content is in no was modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce
                                                                                                                                                                                                                            FEBS
                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=90380276; PubMed=2400577; Esnard F., Esnard A., Faucher D., Capony J.-P., Derancourt J., Esnard M., Gauthier F.; "Rat cystatin C: the complete amino acid sequence reveals a site for N-glycosylation.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                MEDLINE=92225121; PubMed=1563513; Esnard A., Esnard F., Guillou F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-APR-1990
28-FEB-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P14841;
01-APR-1990
                                                   or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                       Sertoli cells.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE OF 8-127.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rattus norvegicus (Rat).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cystatin C
                                                                                                                                                                                                                                                    "Production of the cysteine proteinase
                                                                                                                                                                                                                                                                                             TISSUE=Sertoli
                                                                                                                                                                                                                                                                                                          SEQUENCE OF 8-20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rat brain.";
                                                                                                                                                                                 FUNCTION: As an inhibitor of cysteine proteinases, this protein thought to serve an important physiological role as a local regulator of this enzyme activity. Known to inhibits cathepsin
                                                                                                                                                          SIMILARITY: Belongs to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                Chem. Hoppe-Seyler 371:161-166(1990)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           55
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
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                                                                                                                                                                                                                           300:131-135(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Metazoa;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (Rel. 14, Created)
(Rel. 14, Last sequence up
(Rel. 41, Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                            cells;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16246
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5; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Craniata; Vertebrata; Euteleostomi;
Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                         cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FB873FAA6B6CAB34 CRC64;
                                                                                                                                                                                                                                                     Gauthier F.; inase inhibitor cystatin
                                                                                                                                                                                                                                                                                                                                                             Gauthier
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27
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                                                                (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      update)
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RESULT
CYTC_MC
    REPRESENTATION OF THE PROPERTY OF THE PROPERTY
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01-MAY-1991
01-FEB-1996
10-OCT-2003
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ACT SITE
SITE
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Thiol protease
Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
Klausmer R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.
Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.
Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz
Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C
                                                                                                                                                                                                                                                STRANIN=ILS, and ISS,
MEDLINE=21333810; PubMed=11471062;
Ehringer M.A., Thompson J., Conroy O., Xu
Beeson M., Gordon L., Bennett B., Johnson
"High-throughput sequence identification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN=BALB/c; TISSUE=Brain;
MEDLINE=91054522; PubMed=2241983;
Solem M., Rawson C., Lindburg K., Barnes D.;
"Transforming growth factor beta regulates cystatin mouse embryo (SFME) cells.";
                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
STRAIN-129/Sv; TISSUE=Liver;
STRAIN-129/Sv; TISSUE=Liver;
MEDLINE=95137392; PubMed=7835704;
Huh C., Nagle J.W., Kozak C.A., Abrahamsc
"Structural organization, expression and
mouse cystatin-c-encoding gene (Cst3).";
Gene 152:221-226(1995).
                                                                                                                                                                                                               within alcohol-related QTLs.";
Mamm. Genome 12:657-663(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Biochem. Biophys. Res. Commun. 172:945-951(1990)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cystatin C
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pfam; PF00031; cystatin; SMART; SM00043; CY; 1.
                                                                                                                                                 MEDLINE=22388257;
                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HSSP; P01034; 1G96.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR000010;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protease inhibitor;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OYNKESDDKYHFRIFRVLKVOROV 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (Rel. 18, Created)
(Rel. 33, Last sequence update)
(Rel. 42, Last annotation update)
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                                                                                                                                               PubMed=12477932;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       127
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Rodentia;
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REACTIVE SITE.
SECONDARY AREA O
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A -> B (IN REF.
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Pred. No. 0.01
8; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Craniata; Vertebrata; Euteleostomi;
Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -> E (IN REF. 2)
78F70158B7925853
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Abrahamson M., Karlsson S.; sion and chromosomal mapping
                                                                                                                                                                                                                                                      y O., Xu Y., Yang F., Canniff J
Johnson T.E., Sikela J.M.;
ication of gene coding variants
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      140
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CRC64;
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RESULT 15
CYTC BOVIN
ID CYTC BOVIN
AC P01035;
DT 21-JUL-1999 (
DT 15-JUL-1999 (
DT 28-FEB-2003 (
DE CYSTATIN C PX
GN CST3.
OS Bos taurus (E
OC Bukaryota; Me
OC Bukaryota; Me
OC Mammalia; Eut
OC Bovidae; Bovi
OX NCBI_TaxID=9;
RN [1]
                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 10
         Eukaryota; Metazoa; Cho:
Mammalia; Eutheria; Cet.
Bovidae; Bovinae; Bos.
NCBI_TaxID=9913;
                                                                                                                                                                                                                                                                                                                                                                                                                           DISULFID CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACT SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Blakesley R.W., Touchman J.W., Green B.D., Dickson M.C., Rodriguez A.C., Grinwood J., Schmutz J., Myers R.M., Smailus D.E., Butterfield Y.S.N., Krzyvinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.; "Generation and initial analysis of more than 15,000 full-length human and mouse CDNA sequences", Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).

1- FUNCTION: As an inhibitor of cysteine proteinases, this protein thought to serve an important physiological role as a local regulator of this enzyme activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; M59470; AAA63298.1; --
EMBL; U10098; AAB41056.1; --
EMBL; AF483486; AAL90760.1; --
EMBL; AF483487; AAL90761.1; --
EMBL; BC002072; AAH02072.1; --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bosak S.A., McEwan P
Richards S., Worley I
Villalon D.K., Muzny
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W., Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A., Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A., Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
                                                                                        Bos taurus (Bovine).
                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SMART;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MGD; MGI:102519; Cst3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A36163; A36163.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ß
                                                                                                                                                                                                                                                                                   53
                                                                                                                                                                                                                                                                                                               2 QYNKESDDKYHFRIFRVLKVQRQV 25
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SM00043; CY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S., Loquellano
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J., A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H., s. G., Horley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W., D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                EYNKGSNDAYHSRAIQVVRARKQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PS00287;
                                                                                                                      9 (Rel. 38, Last sequence update)
3 (Rel. 41, Last annotation updat
precursor (Colostrum thiol prote
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21
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75
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140 AA;
                                                                                                                                 (Rel. 01, (Rel. 38, Rel. 41,
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                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; cystatin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1G96.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    inhibitor;
                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CYSTATIN;
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140
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79
103
137
                                                       Chordata; Craniata; Vertebrata; Euteleostomi; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                                           43.48;
41.78;
                                                                                                                                                                                                                                                                                                                                                                                                            15531 MW;
                                                                                                                                                                       Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Signal.
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A -> G (IN REF. 1).
L -> F (IN REF. 1).
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                                                                                                                                                                                                                                                                                                                                              Mismatches
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proteinase inhibitor).
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                                                         Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                              Indels
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                                                                                                                                                                                                                                                                                                                                                                       DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pfam; PF00031; cystatin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              entities requires a license agreement (s or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEBS Lett. 186:41-45(1985).
-!- FUNCTION: This is a thiol proteinase inhibitor.
-!- MASS SPECTROMETRY: MW=13420; METHOD=MALDI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=85231205; PubMed=3891407;
Hirado M., Tsunasawa S., Sakiyama F., Ni
"Complete amino acid sequence of bovine
proteinase inhibitor.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Molecular cloning and N-terminal analysis of bovine identification of a full-length N-terminal region."; Biochim. Biophys. Acta 1343:203-210(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A., SEQUENCE OF 66-83, AND CHARACTERIZATION TISSUE-Cerebrospinal fluid, and Choroid plexus; MEDLINE-98094199; PubMed-9434110; Olsson S.-L., Ek B., Wilm M., Broberg S., Rask L., Bjoerk I Olsson S.-L., Ek B., Wilm M., Broberg S., Rask L., Bjoerk I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Thiol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; Y10811; CAA71771.1; -. HSSP; P01034; 1G96.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     proteinase inhibitor
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROSITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -!- SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 nterPro; IPR000010; Cystatin.
completed: March 18, 2004, ne : 4.21429 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protease inhibitor;
                                                                                                             83
                                                                                                                                                                                                                          10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SM00043; CY;
                                                                                                                                                                  2 QYNKESDDKYHFRIFRVLKVQRQV 25
                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PS00287;
                                                                                                          EFNKRSNDAYOSRVVRVVRARKOV
                                                                                                                                                                                                                                                                                                                                          148 AA;
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102
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112
                                                                                                                                                                                                                                                                                                                                          16265 MW;
                                                                                                                                                                                                                                                    41.7%;
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                          14:16:11
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Pred. No.
                                                                                                                                                                                                                                                                                                                                                                 SECONDARY AREA OF
BY SIMILARITY.
BY SIMILARITY.
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PYRROLIDONE CARBOXYLIC ACID (PROBABLE).
REACTIVE SITE.
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                                                                                                                                                                                                                       Mismatches
                                                                                                             85
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                                                                                                                                                                                                                                                                               Length 148;
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is derived by analysis of the total score distribution.
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  March 18, 2004, 14:05:55 ; Search time 16.1786 Seconds (without alignments) 526.560 Million cell updates/sec
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  Q8WXU5
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Q9epx9 mus musculu
Q9nh95 litomosoide
Q9th95 onchocerca
016159 brugia mala
Q8ilj3 plasmodium
Q80125 cyprinus ca
Q9fyq9 arabidopsis
Q9tz57 caenorhabdi
                                                                           Q8wxu6 homo sapien
Q8wxu5 homo sapien
Q8k5a3 rattus morv
Q9dap1 mus musculu
Q80zn5 mus musculu
Q90sr4 acipenser s
Q98sr3 acipenser s
Q99sr5 acipenser s
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ALIGNMENTS

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RESULT 2
Q8WXU5
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AC Q8WX
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DT 01-M
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Q8WXU6
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Best Local S
Matches 27
Q8WXU5
Q8WXU5;
Q8WXU5;
01-MAR-2002
01-MAR-2002
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SEQUENCE FROM N.A.

Hamil K.G., Liu Q., Zhang Y.-L., French F.S., Hall S.H.;

Hamil K.G., Liu Q., Zhang Y.-L., French F.S., Hall S.H.;

"SC13: A novel epididymal specific member of the cystatin family.";

Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.

EMBL; AF335480; AAL71991.1; -.

GQ; GQ:0004869; F:cystatin; -.

GQ; GQ:0004869; F:cystatin.

InterPro; IPR000011; Cystatin.

Pfam; PF00031; Cystatin; 1.

SMART; SM00043; CY; 1.

SMART; SM00043; CY; 1.
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-MAR-2002
01-MAR-2002
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27; Conserv
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(TrEMBLrel.
                                                                                                    PRELIMINARY;
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Last annotation update)
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Pred. No. 4.4e-14;
                                                                                                    PRT;
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RESULT 4
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AC Q9DA
AC Q9DA
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DT 01-J
DT 01-J
DT 1700
GN 1700
GN 1700
OS Mus
OC Mamm
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QRYSA3

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Best Local S
Matches 14
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Best Local (
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01-OCT-2002
01-JUN-2003
                                                                                                                                                                                Q9DAP1 PRELIMINARY; PRT; 141 AA.
Q9DAP1; O1-JUN-2001 (TrEMBLrel. 17, Created)
O1-JUN-2001 (TrEMBLrel. 17, Last sequence update)
O1-JUN-2003 (TrEMBLrel. 24, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN-Sprague-Dawley;
Hamil K.G., Hall S.H.;
Submitted (APR-2002) to the EMBL/GenBank/DDBJ databases.
EMBL; AF501290; AAM21709.1; -.
GO; GO:0004869; F:cysteine protease inhibitor activity;
InterPro; IPR000010; Cystatin.
Pfam; PF00031; Cystatin; 1.
SMART; SM00043; CY; 1.
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                             Mus musculus (Mouse).
Eukaryota; Metazoa; C
Mammalia; Eutheria; R
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1700006C19RIK.
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Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
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CST11.
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Mammalia; Eutheria; Primates;
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SC13delta.
      NCBI_TaxID=10090;
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(TrEMBLrel. 22,
(TrEMBLrel. 24,
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100.0%; Pr
                                    Chordata;
Rodentia;
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Last sequence update)
Last annotation updat
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Pred. No. 3e-06;
.1; Mismatches
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Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                             Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Craniata; Vertebrata; I
Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
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; Murinae; Rati
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RA Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
RA Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
RA Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
RA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
RA Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
RA Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,
RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
RA Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,
RA Lyons P., Marchionni L., Mashima J., Mazazarelli J., Mombaerts P.,
RA Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,
RA Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
RA Suzuki H., Toyo-oka K., Wang K.H., Weitz C., Whittaker C., Wilming L.,
RA Hayashizaki Y.;
                            Query Match
Best Local S
Matches 14
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Best Local (
                                                                                                                                                                                                                                                                                                                                                                  Q80ZN5;
01-JUN-2003
01-JUN-2003
                                                                                                                          Pfam; PF00031; cystatin;
                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                    01-JUN-2003 (TrEMBLrel. 24,
01-JUN-2003 (TrEMBLrel. 24,
01-OCT-2003 (TrEMBLrel. 25,
RIKEN cDNA 1700006C19 gene.
                                                                                                                                                                                                                                                                                                                                                                                                               Q80ZN5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nature 409:685-690(2001).
EMBL; AK005665; BAB24175.1; -.
HSSP; P01038; 1CEW.
MGD; MGI:1916544; 1700006C19Rik.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
STRAIN-C57BL/6J; TISSUE-Testis;
MEDLINE-21085660; PubMed=11217851;
                                                                                                   SMART;
                                                                                                                                                                           EMBL; BC048681; AAH48681.1; -.
GO; GO:0004869; F:cysteine protease
                                                                                                                                                                                                       Submitted (MAR-2003) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                       Strausberg R.;
                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                          NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                         Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SMART;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pfam; PF00031; cystatin; 1.
                                                                                                                                         InterPro; IPR000010; Cystatin.
InterPro; IPR003243; Cystatin_C/M.
                                                                                                                                                                                                                                   TISSUE=Testicle;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GO; GO:0004869;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hayashizaki Y.;
                                                                                                   ProDom; PD001231; C
SMART; SM00043; CY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Functional annotation of a full-length mouse cDNA collection.";
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SM00043;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                          Similarity
 QYNKESDDKYHFRI FRVLKVQRQVTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EYNKASNDLYNFRVVDILKSQEQITD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QYNKESDDKYHFRIFRVLKVQRQVTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IPR000010; Cystatin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       141 AA;
                                                                                    141 AA;
                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               F:cysteine
                                                                                                                 Cystatin_C/M; 1.
                                                                                                                                                                                                                                                                                            Chordata;
Rodentia;
                                                                                       16825
                                        56.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            56.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16811 MW;
                                                                                       MW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protease
                           Score 81; DB
Pred. No. 0.00
6; Mismatches
                            6;
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Last annotation updat
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Pred. No. 0.00
6; Mismatches
                                                                                                                                                                                                                                                                                            Craniata; Vertebrata; Euteleosto
Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                       C20FA0D8A884951F
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   27
                                                                                                                                                                            inhibitor
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                                                           DB 11;
                                                                                                                                                                                                                                                                                                          Vertebrata; Euteleostomi;
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                                                                                                                                                                            activity; IEA
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                                                      Length 141;
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                                                                                       CRC64;
                              Indels
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RESULT 7
Q98S3
ID Q98S
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Q98SR4
ID 98SR4
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       Query Match
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Q98SR4;
01-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Acipenser schrenckii (Amur sturgeon).
Eukaryota, Metazoa, Chordata, Craniata,
Actinopterygii, Chondrostei, Acipenseri
                                                            Bai J., Lao H., Ye X., Li Y., Lou J.;
"Molecular cloning and sequence analysis of cy
species of sturgeons.";
Submitted (JAN-2001) to the EMBL/GenBank/DDBJ
EMBL; AF334611; AAX16732.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-JUN-2001 (TrEMBLrel. 17, Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   species of sturgeons.";
Submitted (JAN-2001) to the EMBL/GenBank/DDBJ
EMBL; AF334610; AAK16731.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-JUN-2001 (TrEMBLrel. 17, 01-JUN-2001 (TrEMBLrel. 17, 01-JUN-2003 (TrEMBLrel. 24,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q98SR3;
01-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q98SR3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Acipenser sinensis (Chinese sturgeon)
Bukaryota, Metazoa, Chordata, Craniat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cystatin (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cystatin (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GO; GO:0004869; F:cysteine protease inhibitor InterPro; IPR000010; Cystatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bai J., Lao H., Ye X., Li Y., Lou J.;
"Molecular cloning and sequence analysis of cystatin cDNA from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Actinopterygii; Chondrostei; Acipenseriformes; Acipenseridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=111304;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        acipenser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NON TER
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                            ISSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROSITE; PS00287; CYSTATIN; 1.
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                                                                                                                                                                                                                                                                     P01038; 1A90.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               112 AA; 12231 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     46.2%;
       46.2%;
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Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 66; DB 13;
Pred. No. 0.024;
       Score 66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Acipenseriformes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Craniata;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               48ECEBFED8A08C00 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                           analysis of cystatin cDNA from
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       DB
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Length 112;
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RESULT 9
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Best Local S
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Matches 12; Conserv
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NON TER
SEQUENCE
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01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-UN-2003 (TrEMBLrel. 24, Last annotation update)
Cystatin C precursor (Fragment).
Sus scrofa (Pig).
                                                         EMBL; AF311741; AAG40283.1; -.
HSSP; P01034; 1G96.
GO:0004869; F:cysteine protease
InterPro; IPR000010; Cystatin.
                                                                                                                                                                                      MEDLINE=21010502; PubMed=11144350; Taupin P.J., Ray J., Fischer W.H., Gage F.H.; Gage F.H.;
                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                      01-JUN-2003
Cystatin C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q9EPX9;
01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q9EPX9
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EMBL; F14794; CAA23262.1; -.
HSSP; P01034; 1996.
GO; GO:0004869; F:cysteine protease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TISSUE-Small intestine;
MEDLINE=96327607; PubMed=8672129;
Winteroe A.K., Fredholm M., Davies
"Evaluation and characterization of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q29212;
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                                                                                                                                              Neuron 28:385-397 (2000)
                                                                                                                                                                autocrine/paracrine cofactor.";
                                                                                                                                                                                                                                                                         STRAIN=BALB/c;
                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
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                   Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                    Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=9823;
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                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=10090;
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ER 81 81
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EYNKASNXAYHXRXLRVLXVRKO 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QYNKESDDKYHFRIFRVLKVQRQ 24
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IPR000010; Cystatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           81 AA; 8771 MW;
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(TrEMBLrel. 16,
(TrEMBLrel. 24,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
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Rodentia;
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Cetartiodactyla; Suina; Suidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             44.8%;
52.2%;
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Last sequence update)
Last annotation updat
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Pred. No. 0.035;
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Sus.
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OS Lis-c;
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Best Local S
Matches 11
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Matches 10
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Q9TY65;
01-MAY-2000
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Q9NH95;
01-OCT-2000
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VARIANT
VARIANT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-UN-2003 (TrEMBLrel. 24, Last annotation updat
Antigen maltose binding protein (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pfaff A.W., Hoffmann W.H., Taylor D.W., Schulz-Key H.;
"Characterization and immunological properties of a cystein protease
inhibitor of the filarial parasite Litomosoides sigmodontis.";
Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
EMBL; AF229173; AAF35896.1; -.
GO; GO:0004869; F:cysteine protease inhibitor activity; IEA.
                                    Province, Ecuador.";
Parasite Immunol. 16:201-209(1994)
EMBL; S71364; AAC60509.1; -.
                                                                                                                            "Heterogeneity of IgG antibody responses to cloned Oncantigens in microfiladermia positive individuals from
                                                                                                                                                                                              Trenholme K.R., Bradley J.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Nematoda; Onchocercidae; Litomosoides.
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01-JUN-2003
                                                                                                                                                                                                                        MEDLINE=94336252; PubMed=8058358; Trenholme K.R., Tree T.I., Gillespie A.J.,
                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Onchocerca
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CHAIN 25 148 LS-CYSTATIN.
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                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=6282;
                                                                                                                                                                                                                                                                                                                                                                                         Onchocercidae; Onchocerca.
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SMART; SM00043; CY; 1.
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      GO:0004869;
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EYNKGSNDAYHSRAIQVVRARKQL 76
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Pred. No. 0.77;
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RESULT 13
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01-JAN-1998
01-JUN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SMDMILLEU (AV. AND SMEET); -. EMBL; AF015263; AAB69857.1; -. EMBL; AF177193; AAD51086.1; -. GO; GO:0004869; F:cysteine protease interpro; IPR000010; Cystatin.
                                                                                                  Plasmodium falciparum
Eukaryota; Alveolata;
                                                                                                                                            Hypothetical protein. PF14_0250.
                                                                                                                                                                                     01-MAR-2003
01-OCT-2003
                                                                                                                                                                                                                               Q8ILJ3;
01-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SMART;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   parasitic nematode Brugia malayi.";
Submitted (AUG-1999) to the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A. Gregory W.F., Blaxter M.L., Submitted (JUL-1997) to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Brugia malayi (Filarial nematode worm)
Bukaryota; Metazoa; Nematoda; Chromadc
Onchocercidae; Brugia.
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                                                                                                                                                                                                                                                                           Q8ILJ3
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"Two distinct cystatin-type cysteine
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PROSITE; PS00287;
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                                                                                                                                                                                                                                                                                                                                                                                                                  NKESDDKYHFRIFRVLKVQRQV 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NKESDDKYHFRIFRVLKVQRQV 25
                                                                                                                                                                                                                                                                                                                                                                               NQQSNDEYHLMPIKLLKVSSQV 94
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(TrEMBLrel.
(TrEMBLrel.
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EMBL/GenBank/DDBJ
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SEQUENCE FROM N.A.

NCBI_TaxID=36329;

Haemosporida;

Plasmodium

0

STRAIN=3D7

MEDLINE=22255705; PubMed=12368864;

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Q801Z
Q801Z
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DT 01-JU
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DT 01-JU
DT 01-GC
DE Fetui
OC Cypri
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Best Local S
Matches 9
                                                                                                                                                                                                                                                                                                                                                                                     TBai P.-L., Chang G.-D., Huang C.-J.;

"Purification and cloning of carp fetuin.";

Submitted (JAN-2003) to the EMBL/GenBank/DDBJ databases.

EMBL; AY225965; AA074862.1; -.

R GO; GO:0005874; C:microtubule; IBA.

R GO; GO:0004869; F:cysteine protease inhibitor activity; IEA.

R GO; GO:0005198; F:structural molecule activity; IEA.

R GO; GO:0007018; P:microtubule-based movement; IEA.

R GO; GO:007018; P:microtubulin-based movement; IEA.

R GO; GO:0007018; C:structural molecule; RA.

R GO; GO:0007018; R.

R GO; GO:0007018; RA.

R GO; GO:0007018; R
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Q801Z5;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Cyprinus carpio (Common carp).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinoterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; AE014820; AAN36863.1; -. GO: 0003824; F:catalytic activity; IEA. GO: 0004806; F:triacylglycerol lipase activity; IEA. GO; GO:0004806; F:lipid metabolism; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cyprinidae; Cypr
NCBI_TaxID=7962;
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                                                                                        QYNKESDDKYHFRIFRYLKVQRQ 24
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KFNKESDHKSYFKLMEVGRISTQ 188
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(TrEMBLrel. 24, Last sequence update)
(TrEMBLrel. 25, Last annotation update)
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39.1%;
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36.0%;
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Pred. No. 22;
                                                                                                                                                                                                                                              Score 53; DB 13;
Pred. No. 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                Mismatches
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RESULT 15 Q9FYQ9

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Helicase.
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01-MAR-2001 (TrEMBLrel. 16, Created)
01-MAR-2001 (TrEMBLrel. 16, Last sequenc
01-JUN-2003 (TrEMBLrel. 24, Last annotat
Similarity to helicase.
Arabidopsis thaliana (Mouse-ear cress)
                                                                                                             SEQUENCE
                                                                                                                                        "Structural analysis of Arabidopsis thaliana chromosome 5. XI."; Submitted (SEP-1999) to the EMBL/GenBank/DDBJ databases. EMBL; AP000421; Babli0021.1; -. GO; GO:0004316; F:helicase activity; IEA.
                                                                                                                                                                                                                           SEQUENCE FROM N.A. STRAIN=Columbia;
                                                                                                                                                                                                                                                                NCBI_TaxID=3702;
                                                                                                                                                                                                                                                                                  Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                              Q9FYQ9
                                                                                                                                                                                              Kaneko T., Katoh T.,
Tabata S.;
68
                           N
                          OYNKESDDKYHFRIFRVLKVQRQ 24
QYNVHKEKKDHIKLFSTLNVQQK 111
                                                                                                             428 AA; 49107 MW; 811FA8BB2E790E09 CRC64;
                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
                                                                    35.7%;
39.1%;
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Last sequence update)
Last annotation updat
                                                       <u>ب</u>
                                                                    Score 51; DB 10;
Pred. No. 20;
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Search completed: March 18, 2004, 14:21:28 Job time : 17.1786 secs

Copyright

GenCore version (c) 1993 - 2004

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	254	100.0	46	ьį	AAU79860	Aau79860 Human cys
2	254	100.0	49	σ	AAU79863	Human
ω	254	•	80	ຫ	AAU79865	Human
4	254	100.0	115	v	AAU79853	Aau79853 Human cys
₅	254		117	ຫ	AAU79854	Human
o,	254	•	137	տ	AAU79852	Human
7	248	97.6	52	S	AAU79864	
80	154	60.6	59	ຫ	AAU79866	Aau79866 Human cys
9	149	58.7	33	ű	AAU79862	
10	138	54.3	24	σ	AAU79861	Human
11	125	49.2	27	u	AAU79859	Aau79859 Human cys
12	125	49.2	35	ហ	AAU79858	Aau79858 Human cys
13	118	46.5	92	N	AAW78259	Aaw78259 Fragment
14	118	46.5	113	σ	ADA57563	Ada57563 Human sec
15	118	46.5	113	σ	ADA41457	Ada41457 Human sec
16	118	46.5	113	7	ADC74577	Adc74577 Human sec
17	118	46.5	113	7	ADD38088	Add38088 Human sec
18	118	46.5	114	N	AAW78153	Aaw78153 Human sec
19	118	46.5	123	N	AAW78260	Aaw78260 Fragment
20	118	46.5	142	N	AAW78258	Aaw78258 Fragment
21	118	46.5	142	4.	AAE02405	Aae02405 Human cys
22	118	46.5	142	4	AAE04434	Aae04434 Human cys
23	118	46.5	142	σ	ADA57231	Ada57231 Human sec
24	118	46.5	142	σ	ADA41112	Ada41112 Human sec
25	118	46.5	142	7	ADC74335	Adc74335 Human sec

45	44	43	42	41	40	39	38	37	36	ω 5	34	33	32	31	30	29	28	27	
110	110	110	110	110	110	110	110	110	110	110	111	111	111	113	113	113	118	118	1
43.3	43.3	43.3	43.3	43.3	43.3	43.3	43.3	43.3		43.3	43.7	43.7	43.7	44.5	44.5	44.5	46.5	46.5	
50	50	50	50	50	50	50	50	50	50	50	143	142	142	141	141	141	142	142	1
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ABG36903	AAM02833	ABG48915	AAM54871	AAM67252	ABB19524	ABB28913	ABB32389	AAM27545	ABB34086	AAM15096	ADA14374	AAE04433	AAE02404	AAE04432	AAE02403	AAY96576	ADD46710	ADD46706	
Abg36903	Aam02833	Abg48915	Aam54871	Aam67252	Abb19524	Abb28913	Abb32389	Aam27545	Abb34086	Aam15096	Ada14374	Aae04433	Aae02404	Aae04432	Aae02403	Aay96576	Add46710	Add46706	
Human pep	Peptide #	Human liv	Human bra	Human bon	Protein #	Peptide #	Mouse spe	Mouse cys	Murine cy	Mouse tes	Murine cy	Murine cy	Human Pro	Human Pro					

ALIGNMENTS

RRSULT 1
AAUT980
ID AAUT980
XX AAUT7
XX AAUT7
XX AAUT7
XX YOU
DT 15-J
DT 15-J
DT 15-J
DT 14-M
EX Huma
XX Homo
XX Homo Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sper sperm motility; fertilisation; antigenic peptide. Human cystatin-8 Holloway JL, 01-SEP-2000; 2000US-0230230P 29-AUG-2001; 2001WO-US026868. WO200220567-A2 Homo sapiens. 15-JUL-2002 AAU79860; AAU79860 standard; peptide; 46 AA. (ZYMO) ZYMOGENETICS INC. 14-MAR-2002 (first entry) Gao (Zcys8) antigenic fragment #8. 2 Bishop cryopreserved sperm;

Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.

WPI; 2002-383044/41.

Claim 2; Page 97; 100pp; English.

The invention describes an isolated mammalian cystatin-8 (Zcys8) polypeptide (I). (I) is useful for: inhibiting cancer proceagulant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm motility and ferrilisation; and as antigenic peptides to generate antibodies. Zcys8 is useful as research reagent for characterising sites of interaction between Zcys8 and its receptor. Zcys8 is useful in enhancing fertilisation during assisted reproduction in humans and in animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy matterial in vitro for the presence of Zcys8. The antibodies are also useful to isolate large

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                                                                                                                          The invention describes an isolated mammalian cystatin-8 (Zcys8) polypeptide (I). (I) is useful for: inhibiting cancer procoagulant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm motility and fertilisation; and as antigenic peptides to generate antibodies. Zcys8 is useful as research reagent for characterising sites of interaction between Zcys8 and its receptor. Zcys8 is useful in enhancing fertilisation during assisted reproduction in humans and in animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcys8. The antibodies are also useful to isolate large
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                            quantities of Zcys8 protein and DNA sequences that encode Zcys8 generate polynucleotide encoding (I) is useful to detect and to localise expression of a Zcys8 gene in a biological sample and Zcys8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
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Pred. No. 1.9e-28;
); Mismatches 0;
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The invention describes an isolated mammalian cystatin-8 (Zcys8)
CC polypeptide (I) (I) is useful for: inhibiting cancer procoagulant
CC protein in an individual and thus inhibiting the thrombotic events
CC associated with cancer; promoting spermatogenesis, modulating seminal
CC fluid viscosity, enhancing viability of cryopreserved sperm, sperm
CC motility and fertilisation; and as antigenic peptides to generate
CC antibodies. Zcys8 is useful as research reagent for characterising sites
CC of interaction between Zcys8 and its receptor. Zcys8 is useful in
CC enhancing fertilisation during assisted reproduction in humans and in
CC enhancing fertilisation during assisted reproduction in humans and in
CC enhancing fertilisation during assisted reproduction in humans and in
CC quantities, Anti-(I) antibodies are useful to screen biological samples like
CC presence of Zcys8. The antibodies are also useful to isolate large
CC quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes.
CC The polymucleotide encoding (I) is useful to detect and to localise the
CC oligonucleotide probes are useful for in vivo diagnosis. The
CC chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene
CC chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene
CC rearrangements and genetic alterations that inactivate the Zcys8 gene.
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Pred. No. 2.1e-28;
; Mismatches 0;
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RESULT 4
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                                     The invention describes an isolated mammalian cystatin-8 (Zcys8)

CC polypeptide (I). (I) is useful for: inhibiting cancer procoagulant

CC protein in an individual and thus inhibiting the thrombotic events

CC associated with cancer; promoting spermatogenesis, modulating seminal

CC fluid viscosity, enhancing viability of cryopreserved sperm, sperm

CC motility and fertilisation; and as antigenic peptides to generate

CC antibodies. Zcys8 is useful as research reagent for characterising sites

CC of interaction between Zcys8 and its receptor. Zcys8 is useful in

CC enhancing fertilisation during assisted reproduction in humans and in

CC enhancing fertilisation during assisted reproduction in humans and in

CC enhancing fertilisation during assisted reproduction in humans and in

CC enhancing fertilisation during and autopsy material in vitro for the

CC presence of Zcys8. The antibodies are useful to screen biological samples like

CC presence of Zcys8. The antibodies are also useful to isolate large

CC quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes.

CC oligonucleotide encoding (I) is useful to detect and to localise the

CC expression of a Zcys8 gene in a biological sample and Zcys8

CC oligonucleotide probes are useful for in vivo diagnosis. The

CC oplynucleotide encoding (I) is useful in determining whether a subject's

CC polynucleotide encoding (I) is useful to detect and Zcys8

CC chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene

CC cromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene

CC chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene

CC chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene

CC cromosomes contain a mutation in the Zcys8 gene like aneuploidy.
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29-AUG-2001; 2001WO-US026868.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-SEP-2000; 2000US-0230230P
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human cystatin-8 (Zcys8) antigenic fragment #1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAU79853 standard;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (ZYMO ) ZYMOGENETICS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2; Page 94; 100pp; English.
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cystatin-8
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Sequence 115 AA,

Query Match Best Local Similarity

100.0%;

Score 254; DB 5; Pred. No. 5.9e-28;

Length 117;

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                                                                                       CC associated with cancer; promoting spermatogenesis, modulating seminal Cf fluid viscosity, enhancing viability of cryopreserved sperm, sperm CC motility and fertilisation; and as antigenic peptides to generate CC antibodies. Zeys8 is useful as research reagent for characterising sites CC enhancing fertilisation during assisted reproduction in humans and in CC enhancing fertilisation during assisted reproduction in humans and in CC enhancing fertilisation during assisted reproduction in humans and in CC enhancing fertilisation during assisted reproduction in humans and in CC enhancing fertilisation during assisted reproduction in humans and in CC enhancing fertilisation during assisted reproduction in vitro for the CC presence of Zcys8. The antibodies are also useful to isolate large CC quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes. CC The polynucleotide encoding (I) is useful to detect and to localise the CC expression of a Zcys8 gene in a biological sample and Zcys8 collynucleotide probes are useful for in vivo diagnosis. The Olynucleotide probes are useful for in vivo diagnosis. The Scys8 gene contain a mutation in the Zcys8 gene like aneuploidy, gene CC copy number changes, insertions, deletions, restriction site changes and crarrangements and genetic alterations that inactivate the Zcys8 gene. CC This sequence represents an antigenic fragment of human cystatin-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The invention describes an isolated mammalian cystatin-8 (Zcys8) polypeptide (1). (1) is useful for: inhibiting cancer processulant protein in an individual and thus inhibiting the thrombotic events
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
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                                                                         This sequence represents (Zcys8)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2; Page 94-95; 100pp; English.
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Pred. No. 5.8e-28;
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CC polypeptide (I) (I) is useful for: inhibiting cancer procoagulant

CC protein in an individual and thus inhibiting the thrombotic events

CC associated with cancer; promoting spermatogenesis, modulating seminal

CC fluid viscosity, enhancing viability of cryopreserved sperm, sperm

CC motility and fertilisation; and as antigenic peptides to generate

CC antibodies. Scys8 is useful as research reagent for characterising sites

CC of interaction between Zcys8 and its receptor. Zcys8 is useful in

CC enhancing fertilisation during assisted reproduction in humans and in

CC enhancing fertilisation during assisted reproduction in humans and in

CC enhancing fertilisation during assisted reproduction in humans and in

CC enhancing fertilisation during assisted reproduction in humans and in

CC entimals. Anti-(I) antibodies are useful to screen biological samples like

CC presence of Zcys8. The antibodies are also useful to isolate large

CC quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes.

CC expression of a Zcys8 gene in a biological sample and Zcys8

CC expression of a Zcys8 gene in a biological sample and Zcys8

CC oligonucleotide probes are useful for in vivo diagnosis. The

CC chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene

CC crys number changes, insertions, deletions, restriction site changes and

CC retarrangements and genetic alterations, that inactivate the Zcys8 gene.
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                                                                                                                                       Sequence 137
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim
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100.0%; Score 254; DB 5; 100.0%; Pred. No. 7.1e-28; tive 0; Mismatches 0;
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Matches Query Match

45;

Conservative

Score 248; DB 5; Pred. No. 1.6e-27;

Length

Mismatches

Indels

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Gaps

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Local Similarity

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                                                                                                                       quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes. The polynucleotide encoding (I) is useful to detect and to localise the expression of a Zcys8 gene in a biological sample and Zcys8 oligonucleotide probes are useful for in vivo diagnosis. The polynucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zcys8 gene. This sequence represents an antigenic peptide of human cystatin-8 (Zcys8)
                                                                                                                                                                                                                                                                                                                                                                antibodies. Zcys8 is useful as research reagent for characterising sit of interaction between Zcys8 and its receptor. Zcys8 is useful in enhancing fertilisation during assisted reproduction in humans and in
                                                                                                                                                                                                                                                                                                                                                                                                                        associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm motility and fertilisation; and as antigenic peptides to generate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
                                                                                    Sequence 52
                                                                                                                                                                                                                                                                                                  animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcys8. The antibodies are also useful to isolate large
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The invention describes an isolated mammalian cystatin-8 (Zcys8) polypeptide (I). (I) is useful for: inhibiting cancer procoagula protein in an individual and thus inhibiting the thrombotic ever
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97.6%; occ
100.0%; Pr
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RESULT 9
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AAU79866
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Matches 27
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                                                                                                                                                                                                                                                                                                           sequence represents an antigenic peptide of human cystatin-8 (Zcys8)
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                                                                                                                                    20 RQVTDHLEYHLNVEMQWTTCQKPETTN 46
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AAU79862 standard; peptide;

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AAU79861 standard; peptide; 24

15-JUL-2002

(first entry)

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21 QVTDHLEYHLNVEMQWTTCQKPETTN 46

26

26; Similarity

Conservative

Mismatches

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Indels

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RESULT 10

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CC fluid viscosity, enhancing visibility of cryopreserved sperm, sperm cc motility and fertilisation; and as antigenic peptides to generate cc antibodies. Zcy88 is useful as research reagent for characterising sites cof interaction between Zcy88 and its receptor. Zcy88 is useful in cc enhancing fertilisation during assisted reproduction in humans and in cc animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcy88. The antibodies are also useful to isolate large cc quantities of Zcy88 protein and DNA sequences that encode Zcy88 genes. Cc The polynucleotide encoding (I) is useful to detect and to localise the cxpression of a Zcy88 gene in a biological sample and Zcy88 cc oligonucleotide probes are useful for in vivo diagnosis. The polynucleotide encoding (I) is useful in determining whether a subject's copy number changes, insertions, deletions, restriction site changes and crarrangements and genetic alterations that inactivate the Zcy88 gene. This sequence represents an antigenic peptide of human cystatin-8 (Zcy88)
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Best Local S
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                                                                                    Sequence 33 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                          associated with cancer; promoting spermatogenesis,
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58.7%; bu
100.0%; Prr
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                          Score 149;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PD;
                          DB 5;
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                                              Length 33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        modulating seminal
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Human

cystatin-8 (Zcys8) antigenic fragment #9.

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RESULT 11
AAU79859
ID AAU79
XX
AC AAU79
XX
TS-JU
DT 15-JU
XX
XX
DE Humar
XX
KW Cyste
KW Spern
                                                                                                                                                                                                                                                                                                                                                                                                                                        cc antibodies. Zcys8 is useful as research reagent for characterising sites cof interaction between Zcys8 and its receptor. Zcys8 is useful in cc enhancing fertilisation during assisted reproduction in humans and in canimals. Anti-(I) antibodies are useful to screen biological samples like the presence of Zcys8. The antibodies are also useful to isolate large cc guantities of Zcys8 protein and DNA sequences that encode Zcys8 genes. CC The polynucleotide encoding (I) is useful to detect and to localise the cc expression of a Zcys8 gene in a biological sample and Zcys8 coligonucleotide encoding (I) is useful to detect and to localise the cc expression of a Zcys8 gene in a biological sample and Zcys8 coligonucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zcys8 gene.

CC This sequence represents an antigenic peptide of human cystatin-8 (Zcys8)
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                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               polypeptide (I). (I) is useful for: inhibiting cancer proceagulant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm motility and fertilisation; and as antigenic peptides to generate
Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation; antigenic peptide.
                                                      Human cystatin-8 (Zcys8) antigenic fragment #7.
                                                                                             15-JUL-2002
                                                                                                                                 AAU79859
                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 24 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 2; Page 97; 100pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Holloway
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-SEP-2000; 2000US-0230230P
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                                                                                                                                                                    AAU79859 standard; peptide; 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29-AUG-2001; 2001WO-US026868.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (OMYZ)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2002-383044/41.
                                                                                                                                                                                                                                                                                   20 RQVTDHLEYHLNVEMQWTTCQKPE 43
                                                                                                                                                                                                                                                                                                                                         24;
                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ZYMOGENETICS
                                                                                                                                                                                                                                                               ROVIDHLEYHLNVEMOWITCOKPE 24
                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gao Z,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              describes an isolated mammalian cystatin-8 (Zcys8)
                                                                                                                                                                                                                                                                                                                                                       54.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bishop
                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                          Score 138;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                          2.6e-12;
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                                                                                                                                                                                                                                                                                                                                         <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                            Length 24;
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                                                                                                                                                                                                                                                                                                                                         0
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RESULT 12
AAU79858
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CC associated with cancer; promoting spermatogenesis, modulating seminal Cf fluid viscosity, enhancing viability of cryopreserved sperm, sperm CC motility and fertilisation; and as antigenic peptides to generate CC antibodies. Zcys8 is useful as research reagent for characterising sites CC of interaction between Zcys8 and its receptor. Zcys8 is useful in CC enhancing fertilisation during assisted reproduction in humans and in CC enhancing fertilisation during assisted reproduction in humans and in CC enhancing fertilisation during assisted reproduction in humans and in CC enhancing fertilisation during assisted reproduction in humans and in CC presence of Zcys8. The antibodies are useful to screen biological samples like CC presence of Zcys8 protein and DNA sequences that encode Zcys8 genes. CC The polynucleotide encoding (I) is useful to detect and to localise the CC expression of a Zcys8 gene in a biological sample and Zcys8 contain a mutation in the Zcys8 gene like aneuploidy, gene CC chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene CC rearrangements and genetic alterations that inactivate the Zcys8 gene.
                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
                                                                    Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis;
spermatogenesis; seminal fluid viscosity; cryopreserved sper
                                                                                                                       Human cystatin-8 (Zcys8) antigenic fragment
                                                                                                                                                          15-JUL-2002
                                                                                                                                                                                                                                 AAU79858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 27 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             polypeptide (I). (I) is useful for: inhibiting cancer procoagulant protein in an individual and thus inhibiting the thrombotic events
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 2; Page 96; 100pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-SEP-2000; 2000US-0230230P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29-AUG-2001; 2001WO-US026868.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sperm motility; fertilisation; antigenic peptide.
                                                sperm motility;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The invention describes an isolated mammalian cystatin-8 (Zcys8)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Holloway JL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14-MAR-2002
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This sequence represents an antigenic peptide of human cystatin-8 (Zcys8)
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                                                                                                                                                                                                                                                                                                                                                   NKESDDKYHFRIFRVLKVQRQVTD 24
                                                                                                                                                                                                                             standard; peptide;
                                                                                                                                                                                                                                                                                                                         NKESDDKYHFRIFRVLKVQRQVTD 27
                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gao Z,
                                                fertilisation; antigenic peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INC
                                                                                                                                                                                                                                                                                                                                                                                                                100.0%;
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5
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                                                                                                                                                                                                                                                                                                                                                                                                                Score 125; DB 5;
Pred. No. 2.1e-10;
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                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 5;
                                                                    cryopreserved sperm;
                                                                                                                         #6
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                                                                                                                                                                                                                                                                                                                                                                                               0
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0

Homo sapiens

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CC protein in an individual and thus inhibiting the thrombotic events CC associated with cancer; promoting spermatogenesis, modulating seminal CC fluid viscosity, enhancing viability of cryoppreserved sperm, sperm CC motility and fertilisation; and as antigenic peptides to generate artibodies. Zcys8 is useful as research reagent for characterising sites CC of interaction between Zcys8 and its receptor. Zcys8 is useful in CC enhancing fertilisation during assisted reproduction in humans and in CC animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the greeence of Zcys8. The antibodies are also useful to isolate large CC quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes. CC The polynucleotide encoding (I) is useful to detect and to localise the captession of a Zcys8 gene in a biological sample and Zcys8 coligonucleotide probes are useful for in vivo diagnosis. The CC chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that in activate the Zcys8 gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                              Human; secreted protein; fusion protein; gene therapy; protein therapy; diagnosis; tissue; camcer; tumour; neurodegenerative disorder; leukaemia; developmental abnormality; foetal deficiency; blood; allergy; renal; immune system; asthma; lymphocytic disease; brain; hepatic; lymphoma; inflammation; ischaemic shock; Alzheimer's disease; restenosis; AIDS; cognitive disorder; schizophrenia; prostate; obesity; osteoclast; thymus; osteoprosis; arthritis; testis; lung; thyroiditis; thyroid; digestion; endocrine; metabolism; regulation; malabsorption; gastritis; neoplasm.
                                                                                                                                                                                                                                                                                                                             AAW78259 standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leate inhibition of thrombotic events associated with cancer.
                                                                                                                                                                                                           Fragment of human secreted protein encoded by gene 28.
                                                                                                                                                                                                                                                    13-APR-1999
                                                                                                                                                                                                                                                                                           AAW78259;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 35 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The invention describes an isolated mammalian cystatin-8 (Zcys8)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Holloway JL,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This sequence represents an antigenic peptide of human cystatin-8 (Zcys8)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       polypeptide (I).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2; Page 96; 100pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                               12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 NKESDDKYHFRIFRVLKVQRQVTD 24
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100.0%;
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                                                                                                                                                                                                                                                                                                                               92
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Pred. No.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2.9e-10;
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Homo sapiens

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NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPETTN 46

Matches Query Match Best Local

Similarity

46.5%; Score 118; 50.0%; Pred. No. 8.

DB 2; I 3.9e-09; 1es 12;

Length Indels

92;

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11; Mismatches

Conservative

Sequence

92

A,

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12-SEP-1997;
02-OCT-1997;
02-OCT-1997;
                                This sequence represents a fragment of a secreted human protein encoded by the nucleic acid molecule detailed in the descriptor line. The gene can be used to generate fusion proteins by linking to the gene to a human immunoglobulin FC portion (e.g. AAX04302) for increasing the stability of the fused protein as compared to the human protein only. The invention relates to 86 novel genes and their fragments (nucleic acid sequences: AAX04311-X04410; amino acid sequences AAX078126-W78225) which are useful for preventing, treating or ameliorating medical conditions e.g. by protein or gene therapy. Also, pathological conditions can be diagnosed by determining the amount of the new polypeptides in a sample or by determining the presence of mutations in the new polynucleotides. Specific uses are described for each of the 86 polynucleotides, based on described tissues they are most highly expressed in (see AAX04311 for
                                                                                                                                                                                                                                             New isolated human genes and the secreted polypeptides they encode useful for diagnosis and treatment of e.g. cancers, neurological disorders, immune diseases, inflammation or blood disorders.
                                                                                                                                                                                                                                                                                                                                                     Moore
Ebner
                                                                                                                                                                                                                     Disclosure; Page 27; 380pp; English.
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                                                                                                                                                                                                                                                                                                                 WPI; 1999-080881/07.
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                         described uses)
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Brewer LA,
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97US-0058975P.
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97US-0055984P.
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97US-0052989P.
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97US-0058971P.
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97US-0049609P
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ADAS7563
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                        The invention relates to 592 new human secreted polypeptides useful for CC diagnosing, treating or preventing e.g. immune disorders, inflammatory CC conditions, respiratory disorders, cancers, CNS disorders, or convolegementative disorders, or polypeptides comprising an amino acid sequence at least 95% identical to the new sequences. The polypeptides, cantibodies or antibody fragments that bind to the polypeptides, nucleic calds encoding the polypeptides, agonists or antagonists that binds to the polypeptide, are useful in preparing diagnostic or pharmaceutical compositions for diagnosing, treating or preventing an e.g. immune cd disorders, inflammatory conditions (e.g. inflammatory bowel disease, comphritis or Crohm's disease), respiratory disorders (e.g. asthma and clarry), cancers (e.g. gastric, ovarian or lung cancer), CNS disorders (e.g. multiple sclerosis or ischaemic brain injury), neurodegenerative complying for controlling gene expression through triple helix formation complying, for controlling gene expression through triple helix formation or antisense DNA or RNA, in gene therapy, for identifying individuals from minute biological samples, in forensic biology, and as hybridization controlling sene useful for as molecular weight markers on sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE) controlling sene asting biological activities, and for treating to a substituties, and for treating to a substituties, and for treating the substituties, and for treating the substituties and for treating the substituties.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New human secreted polypeptides and polynucleotides, useful for diagnosing, treating or preventing e.g. immune disorders, inflammatory conditions, respiratory disorders, cancers, CNS disorders, or neurodegenerative disorders.
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19-JUL-2001; 2001US-0306171P.
13-NOV-2001; 2001US-0331287P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 13; SEQ ID NO 1756; 1754pp; English
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preventing neural disorders,

The invention relates to novel genes ADA39629-ADA40565 and proteins ADA40566-ADA41501 for human secreted proteins, useful for preventing, treating or ameliorating medical conditions e.g. by protein or gene therapy. The polypeptides, nucleic acid molecules, antibodies or their fragments, and agonists or antagonists that bind to the polypeptide are useful for preparing a diagnostic or pharmaceutical composition for diagnosing or treating cancer or other hyperproliferative disorder. The polypeptides and nucleic acid molecules are also useful for detecting, prognosticating, treating or ameliorating cancer or the polypeptides and nucleic acid molecules are also useful for detecting, prognosticating, treating or ameliorating cancer

Claim 1; SEQ ID NO 1840; 3205pp; English.

asthma, allergies or

or other hyperproliferative disorders including neoplasms, autoimmune disorders (e.g. diabetes, rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis, autoimmune thyroiditis or haemolytic anaemia), haematopoietic or haematological disorders (e.g. anaemia,

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XX Homo
XX Clain
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Best Local S
Matches 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human; secreted protein; cancer; hyperproliferative disorder; rheumatoid arthritis; autoimmune disorder; haematopoietic disorder; anaemia; allergic reaction; astima; cardiovascular disorder; wound healing; cytostatic; immunosuppressive; nootropic; neuroprotective; antiviral; antiallergic; hepatotropic; antidiabetic; antiinflammatory;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 muscular, reproductive, gastrointestinal, pulmonary, cardiovascular, renal, proliferative and/or cancerous diseases. This sequence corresponds to one of the polypeptide of the invention. Note: The sequence data for this patent did form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New human secreted proteins and nucleic acid molecules, useful for preparing a diagnostic or pharmaceutical composition for diagnosin preventing or treating cancer or other hyperproliferative disorder
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19-JUL-2001; 2001US-0306171P.
13-NOV-2001; 2001US-0331287P.
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1.1e-08;
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Query Match
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Matches 23; Conserv
                                                                                                                                                                                                   thrombocytopenia), allergic reactions including asthma or eczema, inflammatory disorders (e.g. ischaemia-reperfusion injury, inflammatory bowel disease or Crohn's disease), neurodegenerative disorders (e.g. Alzheimer's disease or Parkinson's disease), cardiovascular disorders (e.g. Alzheimer's disease or Parkinson's disease), cardiovascular disorders (e.g. atherosclerosis, myocarditis), infectious diseases (bacterial, fungal or viral infections including HIV/AIDS), or wound healing and disorders of epithelial cell proliferation. The nucleic acids are also useful for chromosome identification, radiation hybrid mapping or long-range restriction mapping, as molecular weight markers, or as hybridization or diagnostic probes. The polypeptides and antibodies are useful for providing immunological probes for differential identification of the tissues immunohistochemistry assays. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at
                                                                                                                      Sequence 113 AA;
                                                                                                                                                                    ftp.wipo.int/pub/published_pct_sequences.
46.5%; Score 118; DB 6; Length 113; nilarity 50.0%; Pred. No. 1.1e-08; Conservative 11; Mismatches 12; Indels
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1 NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPETTN 46
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58 NKESEDKYVFLVVKTLQAQLQVTNLLEYLIDVEIARSDCRKFLSTN 103

Search completed: March 18, 2004, 14:14:59 Job time : 41.7103 secs

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length: 2000000000
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Match
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1: /cgn2_6/ptodata/2/iaa/5A_COMB.pep:*

2: /cgn2_6/ptodata/2/iaa/5B_COMB.pep:*

3: /cgn2_6/ptodata/2/iaa/6A_COMB.pep:*

4: /cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*

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Copyright (c) 1993 - 2004 Compugen Ltd.
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US-09-86-319A-46
US-09-86-319A-46
US-09-86-319A-48
US-09-86-319A-48
US-09-775-932-24
US-09-617-302-5
US-09-775-932-2-16
US-09-791-522-3
US-08-849-303-15
US-08-849-303-15
US-08-832-555-11
US-08-832-555-11
US-08-9314-777-3
US-09-314-777-3
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GENERAL INFORMATION:

APPLICANT: Holloway, James L.

APPLICANT: Feldhaus, Andrew

ITILE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTBIN CYSTATIN T

FILE REFERENCE: 98-72 C1

CURRENT APPLICATION UMBER: US/09/617,302

CURRENT FILING DATE: 2000-07-17

PRIOR APPLICATION NUMBER: 09/431,480

PRIOR APPLICATION NUMBER: 60/109,217

PRIOR FILING DATE: 1998-11-20

PRIOR FILING DATE: 1998-11-20

PRIOR FILING DATE: 1998-01-28

PRIOR FILING DATE: 1999-09-28

NUMBER OF SEQ ID NOS: 22
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Patent No. 6245529
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78	78	78	80	81	84	84	84	84	84	94	94	94	94	94	94	94	94
30.7	30.7	30.7	31.5	31.9	33.1	33.1	33.1	33.1	33.1		37.0	37.0		37.0	37.0	37.0	37.0
149	128	121	111	162	141	141	141	141	121	146	146	146	146	146	146	146	146
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US-08-461-030C-2	US-09-775-932-12	US-09-775-932-14	US-08-849-303-26	US-08-849-303-25	US-08-849-303-24	US-09-940-497-6	US-09-241-376-6	US-08-744-138-6	US-09-775-932-8	5432264-6	PCT-US95-07135-9	US-08-849-303-17	US-09-976-594-37	US-09-940-497-3	US-09-886-319A-47	US-09-528-436B-3	US-09-241-376-3
Sequence :	Sequence	Sequence	Sequence (Sequence (Patent No.	Sequence !	Sequence 1	Sequence :	Sequence :	Sequence '	Sequence :	Sequence :					
,	12,	14,	26,	25,	24,	,		•	,	54	,	17,	37,		47,	Ü	ω
2, Appli	Appl	App1	Appl	Appl	Appl	Appli	Appli	Appli	Appli	5432264	Appli	App1	Appl	Appli	App1	Appli	Appli

ALIGNMENTS

CURRENT APPLICATION NUMBER: US/09/431,480 CURRENT FILING DATE: 1999-11-01 EARLIER APPLICATION NUMBER: 60/109,217 EARLIER FILING DATE: 1998-11-20 EARLIER FILING DATE: 1999-09-28 EARLIER FILING DATE: 1999-09-28 EARLIER FILING DATE: 1999-09-28 EARLIER FILING DATE: 1999-09-28 EARLIER FILING DATE: 1999-09-38 EARLIER FILING DATE: 1999-09-31 EARLIER FILING DATE: 1999-09-38 EARLIER FILING DATE: 1999-19-39 EARLIER FILIN Sequence 4, Application US/09431480 Patent No. 6235708 GENERAL INFORMATION: APPLICANT: Holloway, James L. APPLICANT: Feldhaus, Andrew TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN FILE REFERENCE: 98-72 57 NKESEDKYVFLVVKTLQAQLQVTNLLEYLIDVEIARSDCRKPLSTN 102 1 NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPETTN l Similarity 23; Conserv 46.5%; Scilarity 50.0%; Pr Conservative 11; Score 118; DB 3; Pred. No. 4.5e-10; 1; Mismatches 12 Length 142; Indels 0 Gaps

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US-09-617-302-2
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; ORGANISM: Homo sapiens
US-09-617-302-4
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SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 2
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GENERAL INFORMATION:
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SEQ ID NO 4
                                                          SEQ ID NO 2
LENGTH: 141
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 44.5%;
Best Local Similarity 51.2%;
Matches 21; Conservative
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APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN
FILE REFERNCE: 98-72
CURRENT APPLICATION NUMBER: US/09/431,480
CURRENT FILING DATE: 1999-11-01
EARLIER FILING DATE: 1999-11-20
EARLIER FILING DATE: 1998-11-20
EARLIER APPLICATION NUMBER: 60/156,382
EARLIER FILING DATE: 1999-09-28
EARLIER FILING DATE: 1999-09-28
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                                                                                                                                                                                                CURRENT APPLICATION NUMBER: US/09/617,302
CURRENT FILING DATE: 2000-07-17
PRIOR APPLICATION NUMBER: 09/431,480
PRIOR FILING DATE: 1999-11-01
PRIOR APPLICATION NUMBER: 60/109,217
                                                                                                                PRIOR APPLICATION NUMBER: 60/1
PRIOR FILING DATE: 1998-11-20
PRIOR APPLICATION NUMBER: 60/1
PRIOR FILING DATE: 1999-09-28
NUMBER OF SEQ ID NOS: 22
                                                                                                                                                                                                                                                                                                          APPLICANT: Holloway, James L.
APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIG SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN
FILE REFERENCE: 98-72 C1
               LENGTH: 141
TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH: 141
TYPE: PRT
ORGANISM: Homo sapiens
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23; Conserv
                                                                                                   FastSEQ for Windows Version 3.0
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                                                                                                                                                               60/156,382
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                                                                                                                                                              ; LENGTH: 142
; TYPE: PRT
; ORGANISM: Mus musculus
US-09-617-302-3
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CURRENT FILING DATE: 2000-07-17
PRIOR APPLICATION NUMBER: 09/431,480
PRIOR FILING DATE: 1999-11-01
PRIOR APPLICATION NUMBER: 60/109,217
PRIOR APPLICATION NUMBER: 60/109,217
PRIOR FILING DATE: 1998-11-20
PRIOR PPLICATION NUMBER: 60/156,382
PRIOR FILING DATE: 1999-09-28
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SEQ ID NO 3
LENGTH: 142
                                                                                                                                                                                                                                             SOFTWARE:
SEQ ID NO 3
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                                                                                   Matches
                                                                                                                      Query Match
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Best Local 9
                                                                                                    Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CURRENT APPLICATION NUMBER: US/09/431,480 CURRENT FILING DATE: 1999-11-01 EARLIER APPLICATION NUMBER: 60/109,217 EARLIER FILING DATE: 1998-11-20 EARLIER APPLICATION NUMBER: 60/156,382 EARLIER FILING DATE: 1999-09-28 NUMBER OF SEO ID NOS: 22
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APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN T
FILE REFERENCE: 98-72 C1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Holloway, James L.
APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE
FILE REFERENCE: 98-72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           57 NKESEDKYVFLVDKILHAKLQITDRMEYQIDVQISRSNCKKP 98
                                                                                   18;
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                             1 NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKP 42
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NKESEDKYVFLVDKILHAKLQITDRMEYQIDVQISRSNCKKP
                                                                                   Conservative
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                                                                                                    Score 111; DB 3;
Pred. No. 5.1e-09;
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Pred. No. 2.5e-09;
B; Mismatches 12; Indels
                                                                                                                      Length 142;
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                                                                                                                                                                                                                                                                                                                                       RESULT 8
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                                                                                                                                                                                                                                                                           Sequence 46, Application US/09886319A Patent No. 6586185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
                                                                         APPLICANT: Regenbogen, Johannes
APPLICANT: Goppelt, Andreas
TITLE OF INVENTION: Use of Polypeptides or Nucleic Acids for
TITLE OF INVENTION: the Diagnosis or Treatment of Skin Disorders and Wound
TITLE OF INVENTION: Healing and for the Identification of Pharmacologically
TITLE OF INVENTION: Active Substances
                                                                                                                                                                                          APPLICANT: Wolf, Eckard
APPLICANT: Werner, Sab.
APPLICANT: Halle, Jorn
CURRENT APPLICATION NUMBER: US/09/886,319A CURRENT FILING DATE: 2001-06-20 PRIOR APPLICATION NUMBER: US 60/222,081
                                                         FILE REFERENCE: 50125/014002
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APPLICANT: Atkinso
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TELECOMMUNICATION INFORMATION:
TELEPHONE: 201-487-5800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: US/08/84
FILING DATE: 21-MAY-1997
CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: Jackson Esq., David A.
REGISTRATION NUMBER: 26,742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE: Klauber & Jackson
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                                                                                                                                                                                                                                                                                                                                                                                        19;
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Halle, Jorn-Peter
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                                                                                                                                                                                                                                               US-08-849-303-16
                                                                                                                                                                                                                                                                  RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-886-319A-48
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    GENERAL INFORMATION:
APPLICANT: Ackinson, Howard J.
APPLICANT: McPherson, Michael J.
APPLICANT: Wryin, Peter E.
TITLE OF INVENTION: MODIFIED PROTEINASE INHIBITORS
NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
ADDRESSEE: Klauber & Jackson
STREET: 411 Hackensack Avenue, 4th Floor
                                                                                                                                                                                                Sequence 16,
Patent No. 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 48
LENGTH: 140
                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION NUMBER: US/09/886,319A CURRENT FILING DATE: 2001-06-20 PRIOR APPLICATION NUMBER: US 60/222,081 PRIOR FILING DATE: 2000-08-01 PRIOR APPLICATION NUMBER: DE 10030149.5 PRIOR FILING DATE: 2000-06-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Regenbogen, Johannes
APPLICANT: Goppelt, Andreas
APPLICANT: Goppelt, Andreas
TITLE OF INVENTION: Use of Polypeptides or Nucleic Acids for
TITLE OF INVENTION: the Diagnosis or Treatment of Skin Disorders and Wound
TITLE OF INVENTION: Healing and for the Identification of Pharmacologically
TITLE OF INVENTION: Active Substances
FILE REFERENCE: 50125/014002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR FILING DATE: 2000-08-01
PRIOR APPLICATION NUMBER: DE 10030149.5
PRIOR FILING DATE: 2000-06-20
NUMBER OF SEQ ID NOS: 84
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Wolf,
APPLICANT: Wern
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM: Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 140
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19; Conserv
                                                                                                                                                                                                    6680424
Hackensack
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Halle, Jorn-Peter
                                                                                                                                                                                                                         Application US/08849303
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                                                                                                                                                                                                                                                                                                                                                                                                                              39.0%; Score 99;
43.2%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                      10; Mismatches
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RESULT 12
US-09-431-480-5
; Sequence 5, Application US/09431480
; Patent No. 6235708
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US-09-775-932-24
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Best Local Similarity
""" hes 18; Conserve
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                              CURRENT APPLICATION NUMBER: US/09/775,932
CURRENT FILING DATE: 2001-02-02
PRIOR APPLICATION NUMBER: CA99/00717
PRIOR FILING DATE: 1999-08-05
PRIOR APPLICATION NUMBER: 60/095,503
PRIOR APPLICATION NUMBER: 60/095,503
PRIOR FILING DATE: 1998-08-05
NUMBER OF SEQ ID NOS: 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Univers
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                   SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILE REFERENCE:
                                                                                                                                                                                                                                                           LENGTH: 118
TYPE: PRT
ORGANISM: Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELECOMMUNICATION INFORMATION: TELEPHONE: 201-487-5800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION: NAME: Jackson Esq., Davi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: FILING DATE: 21-MAY CLASSIFICATION: 514
                                                                                                                                                                                         Match 38.6%; Score 98; DB 4; Local Similarity 41.9%; Pred. No. 3.6e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEPHONE: 201-343-1684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: Jackson Esq., David A.
REGISTRATION NUMBER: 26,742
REFERENCE/DOCKET NUMBER: 1321-1-003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ENGTH:
                                                                                                      34 NKRSNDAYQSRVVRVVRARKQVVSGMNYFLDVELGRTTCTKSQ 76
                                                                                                                                                                        18;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         112 amino acids
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linear
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                                                                                                                                                                        Conservative
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N: 514
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                                                                                                                                                                        10; Mismatches
                                                                                                                                                                                                         DB 4; Length 118;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Modified Cystatins
                                                                                                                                                                        15; Indels
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                                                                                                                                                                                  US-08-849-303-18
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US-09-617-302-5
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Best Local Similarity
Matches 18; Conserv
                                                                                                                                      Sequence 18, Application US/08849303
Patent No. 6680424
                                                                                                                                                                                                                                                                                                                                                                   Query Match 37.4%; Score 95; DB 3; Best Local Similarity 40.9%; Pred. No. 1.3e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 5, Application US/09617302
Patent No. 6245529
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                                                         GENERAL INFORMATION:
APPLICANT: Atkinso
APPLICANT: McPhero
APPLICANT: Urwin,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION NUMBER: US/09/617,302
CURRENT FILING DATE: 2000-07-17
CURRENT PPLICATION NUMBER: 09/431,480
PRIOR PPLICATION NUMBER: 09/431,480
PRIOR FILING DATE: 1999-11-01
PRIOR APPLICATION NUMBER: 60/109,217
PRIOR FILING DATE: 1998-11-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION NUMBER: 60/
PRIOR FILING DATE: 1999-09-28
NUMBER OF SEQ ID NOS: 22
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NUMBER OF SEQ ID NOS: 22
SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN T
FILE REFERENCE: 98-72 C1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Holloway, APPLICANT: Feldhaus,
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APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN T
FILE REFERENCE: 98-72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: PRT
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              APPLICANT: Urwin, Peter E.
TITLE OF INVENTION: MODIFIED PROTEINASE INHIBITORS
NUMBER OF SEQUENCES: 79
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                   55
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FastSEQ for Windows Version 3.0
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                                                                          Atkinson, Howard J.
McPherson, Michael J.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 95; DB
Pred. No. 1.3e
10; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                        Length 140;
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ADDRESSEE:

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CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/849,303
FILING DATE: 21-MAY-1997
CLASSIFICATION S14
ATTORNEY/AGENT INFORMATION:
NAME: Jackson E8g., David A.
REGISTRATION NUMBER: 26,742
REFERENCE/DCCKET NUMBER: 1321-1-003
TELEPHONE: 201-487-5800
TELEPHONE: 201-487-5800
TELEPAX: 201-343-1684
TELEPAX: 13521
INFORMATION FOR SEQ ID NO: 18:
SEQUENCE CHARACTERISTICS:
LENGTH: 140 amino acids
TYPE: mino acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: protein
HYPOTHETICAL: NO
US-08-849-303-18
                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:

APPLICANT: University of British Columbia

FILE REFERENCE: 58069

CURRENT APPLICATION NUMBER: US/09/775,932

CURRENT FILING DATE: 1001-02-02

PRIOR APPLICATION NUMBER: CA99/00717

PRIOR APPLICATION NUMBER: 60/095,503

PRIOR FILING DATE: 1999-08-05

PRIOR APPLICATION NUMBER: 60/095,503

PRIOR PILING DATE: 1998-08-05

NUMBER OF SEQ ID NOS: 32

SOFTWARE: PatentIn Ver. 2.0
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US-09-775-932-16
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                                                                                                                                                                                                                   ; TYPE: PRT
; ORGANISM: Gallus sp.
US-09-775-932-16
                                                                                                     Query Match 37.0%; Score 94; DB 4; Length 116; Best Local Similarity 43.9%; Pred. No. 1.4e-06; Matches 18; Conservative 9; Mismatches 14; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 37.4%; Score 95; DB 4; Length 140; Best Local Similarity 40.9%; Pred. No. 1.3e-06; Matches 18; Conservative 10; Mismatches 16; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 16, Application US/09775932 Patent No. 6534477
                                                                                                                                                                                                                                                                                                 LENGTH: 116
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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STREET: 411
STREET: Hackensack
CITY: Hackensack
CTATE: New Jersey
HIGA
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ZIP: 07601
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Search completed: March 18, 2004, 14:25:36 Job time: 11.7738 secs

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Maximum DB
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Listing first 45 summaries
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Copyright (c) 1993 - 2004 Compugen Ltd.
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Sequence 13, Appl
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ALIGNMENTS

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Sequence 13, Application US/09941314
Pattent No. US20020142396A1
GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
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SOFTWARE: FRSTSEQ for Windows Version 4.0
SEQ ID NO 10
LENGTH: 46
TYPE: PRT
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Patent No. US20020142396A1
GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
APPLICANT: ZymoGenetics, Inc.
APPLICANT: INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
FILE REFERENCE: 00-81PC
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Best Local Similarity
Matches 46; Conserv
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CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
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Pred. No. 2.2e-27;
; Mismatches 0;
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CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29

FILE REFERENCE: 00-81PC

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TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein FILE REFERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
TYPE: PRT
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US-09-941-314-15
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Patent No. US20020142396A1
GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
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NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version
SEQ ID NO 13
LENGTH: 49
TEXTS TO THE TEXT OF 
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GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
                                                                                                                                                     SEQ ID NO 3
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Best Local (
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                                                                                                                                                                              CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
FRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein FILE REFERENCE: 00-81PC
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PRIOR APPLICATION NUMBER: 60/230,230
                             ORGANISM: Homo sapiens
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100.0%; Pred. No. 4.2e-27;
tive 0; Mismatches 0;
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FILE REFERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOPTWARE: PastSEQ for Windows Version 4.0
SEQ ID NO 2
LENGTH: 137
TYPE: PRT
ORGANISM: Homo sapiens
US-09-941-314-2
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                                                                                                                                                                                                                                                                                                                                                                            Sequence 2, Application US/09941314
Patent No. US20020142396A1
GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Proceagulant Protein
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SOPTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 4
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Patent No. US20020142396A1
GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
                                                                                         Query Match
Best Local Similarity
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Best Local
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CURRENT FILING DATE: 2001-08-29
'PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION: Mammalian Cystatin-8 and Its TITLE OF INVENTION: Inhibit Cancer Procoagulant FILE REFERENCE: 00-81PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: PRT ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 117
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                   1 NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPETTN
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NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPETTN 100
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                                                                         100.0%; Score 254; DB 9;
100.0%; Pred. No. 7.7e-27;
vative 0; Mismatches 0;
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Pred. No. 6.4e-27;
; Mismatches 0;
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Protein
                                                                                                             Length 137;
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US-09-941-314-14

Sequence 14, Application US/09941314 Patent No. US20020142396A1

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GENERAL INFORMATION:

APPLICANT: ZymoGenetics, Inc.

TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to

TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to

TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein

PILE REFERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314

CURRENT PILING DATE: 2001-08-29

PRIOR APPLICATION NUMBER: 60/230,230

PRIOR FILING DATE: 2001-09-01

NUMBER OF SEQ ID NOS: 19

SOPTWARE: FastSEQ for Windows Version 4.0

SEQ ID NO 12

LENGTH: 33
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US-09-941-314-12
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US-09-941-314-14
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CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 16
LENGTH: 59
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APPLICANT: ZymoGenetics, Inc.
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TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein FILE REFERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
NUMBER OF SEQ ID NOS: 19
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Pred. No.
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TITLE OF INVENTION: Manmalian Cystatin-8 and Its Use to TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein FILE REFERENCE: 00-81PC CURRENT APPLICATION NUMBER: US/09/941,314 CURRENT FILING DATE: 2001-08-29 PRIOR APPLICATION NUMBER: 60/230,230 PRIOR APPLICATION NUMBER: 60/230,230 PRIOR FILING DATE: 2001-09-01 NUMBER OF SEQ ID NOS: 19 SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 9 LENGTH: 27 TYPE: PRT ORGANISM: Homo sapiens US-09-941-314-9
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patent No. US20020142396A1

GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein FILE REFERENCE: 00-01PC

CURRENT APPLICATION NUMBER: US/09/941,314

CURRENT FILING DATE: 2001-08-29

PRIOR APPLICATION NUMBER: 60/330,230

PRIOR FILING DATE: 2001-09-01

NUMBER OF SEQ ID NOS: 19

SOFTWARE: FastSEQ for Windows Version 4.0

SEQ ID NO 11
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US-09-941-314-11
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; ORGANISM: Homo sapiens
US-09-941-314-12
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Patent No. US20020142396A1
GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
                                                                                                                                                                                              Query Match
Best Local Similarity
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TYPE: PRT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    y Match 54.3%; Score 138; DI
Local Similarity 100.0%; Pred. No. 8e-
hes 24; Conservative 0; Mismatches
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                                          1 NKESDDKYHFRIFRVLKVQRQVTD 24
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NKESDDKYHFRIFRVLKVQRQVTD 27
                                                                                                                                                        Conservative
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                                                                                                                                                                                          49.2%; Score 125; DB 9; 100.0%; Pred. No. 5.5e-1
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                                                                                                                                                                                                                                            DB 9;
                                                                                                                                                                                                                                    Length 27;
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GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use
TITLE OF INVENTION: Inhibit Cancer Procoagulant Pro
FILE REFERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
PRIOR FILING DATE: 2001-09-01
PRIOR FILING DATE: 2001-09-01
PRIOR FILING DATE: 2001-09-01
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PRIOR APPLICATION NUMBER: US 60/180,312
PRIOR FILING DATE: 2000-02-04
PRIOR APPLICATION NUMBER: US 60/207,456
PRIOR FILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: US 09/632,366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Hanzel, David K.
APPLICANT: Chen, Wensheng
TITLE OF INVENTION: HUMAN GENOME-DERIVED SINGLE EXON NUCLEIC ACID
TITLE OF INVENTION: GENE EXPRESSION ANALYSIS BY MICROARRAY
FILE REFERENCE: Aeomica-X-1
CURRENT APPLICATION NUMBER: US/09/864,761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Penn, Sharron G.
APPLICANT: Rank, David R.
APPLICANT: Hanzel, David K
APPLICANT: Chen, Wensheng
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                                   FILING DATE: 2001-01-30
APPLICATION NUMBER: PCT/US01/00663
FILING DATE: 2001-01-30
APPLICATION NUMBER: PCT/US01/00662
FILING DATE: 2001-01-30
                                                                                                                                                                                                                                                                             FILING DATE: 2001-01-30
APPLICATION NUMBER: PCT/US01/00667
FILING DATE: 2001-01-30
                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: GB 24263.6
FILING DATE: 2000-10-04
APPLICATION NUMBER: US 60/236,359
FILING DATE: 2000-09-27
APPLICATION NUMBER: PCT/US01/00661 FILING DATE: 2001-01-30
                                                                                                                                                                             FILING DATE: 2001-01-30
APPLICATION NUMBER: PCT/US01/00665
                                                                                                                                                                                                                       APPLICATION NUMBER: PCT/US01/00669
                                                                                                                                                                                                                                                            APPLICATION NUMBER: PCT/US01/00664
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                                                                                                                                       APPLICATION NUMBER: PCT/US01/00668
                                                                                                                                                            FILING DATE:
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US20020048763A1
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Hanzel, David K.
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Pred. No. 7.4e-10;
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; OTHER INFORMATION:
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US-09-864-761-34822
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US-09-864-761-48936
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Best Local Similarity
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PRIOR FILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: US 09/632,366
PRIOR FILING DATE: 2000-08-03
PRIOR APPLICATION NUMBER: GB 24263.6
PRIOR FILING DATE: 2000-10-04
PRIOR APPLICATION NUMBER: US 60/236,359
PRIOR APPLICATION NUMBER: US 60/236,359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION NUMBER: US/09/864,761
CURRENT FILING DATE: 2001-05-23
PRIOR APPLICATION NUMBER: US 60/180,312
PRIOR FILING DATE: 2000-02-04
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FEATURE:
OTHER INFORMATION: NOTHER INFORMATION: N
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PRIOR FILING DATE: 2000-06-30
PRIOR APPLICATION NUMBER: US 09/774,203
PRIOR FILING DATE: 2001-01-29
                                                                                                    PRIOR FILING DATE: 2001-01-30
PRIOR APPLICATION NUMBER: PCT/US01/00667
PRIOR FILING DATE: 2001-01-30
PRIOR APPLICATION NUMBER: PCT/US01/00664
PRIOR FILING DATE: 2001-01-30
PRIOR APPLICATION NUMBER: PCT/US01/00669
PRIOR FILING DATE: 2001-01-30
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION: HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Penn, Sharron
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APPLICATION NUMBER: PCT/US01/00666
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                                                                      APPLICATION NUMBER: PCT/US01/00665
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IN BARIN, SIGNAL
IN BRAIN, SIGNAL
J IN PLACENTA, SIGNAL = 1.6
JED IN FETAL LIVER, SIGNAL = 1.1
JED IN BT474, SIGNAL = 1.1
JED IN HEART, SIGNAL = 1.5
JED IN HEART, SIGNAL = 1.2
JED IN HEART SIGNAL = 1.4
JED IN HEART SIGNAL SIG
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PCT/US01/00668
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HIT: AI200857.1, EVALUE 5.00e-23
HIT: O60676, EVALUE 1.00e-01
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Pred. No. 1
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1.2e-07;
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PRIOR FILING DATE: 2001-01-30

PRIOR APPLICATION NUMBER: PCT/US01/00663

PRIOR FILING DATE: 2001-01-30

PRIOR PILING DATE: 2001-01-30

PRIOR PILING DATE: 2001-01-30

PRIOR FILING DATE: 2001-01-30

PRIOR PILING DATE: 2001-01-30

PRIOR PILING DATE: 2001-01-30

PRIOR PILING DATE: 2001-01-30

PRIOR PILING DATE: 2000-09-21

PRIOR APPLICATION NUMBER: US 60/234,687

PRIOR APPLICATION NUMBER: US 09/608,408

PRIOR PILING DATE: 2000-06-30

PRIOR APPLICATION NUMBER: US 09/774,203

PRIOR PILING DATE: 2001-01-29

NUMBER OF SEQ ID NOS: 49117

SOFTWARE: Annomax Sequence Listing Engine vers. 1.1

SEQ ID NO 48936

LENGTH: 50

TYPE: PRT

OGGANISM: Homo sapiens

FEATURE:

OTHER TYPE:
                                                                                                                                                                                                                                                       CURRENT APPLICATION NUMBER: US/09/740,638;
CURRENT FILING DATE: 2000-12-18;
NUMBER OF SEQ ID NOS: 13;
SOPTWARE: FASTSEQ for Windows Version 3.0;
SEQ ID NO 2;
SEQ ID NO 2;
LENGTH: 145;
TYPE: PRT
CRCANISM: Homo sapiens
US-09-740-638-2
Search completed: March 18, 2004, 14:30:54 Job time: 28.8373 secs
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OTHER INFORMATION: EXPRESSED IN BT474, SIGNAL = 0.96
OTHER INFORMATION: EST_HUMAN HIT: AIZ00857.1, EVALUE 5.00e-23
OTHER INFORMATION: SWISSPROT HIT: O60676, EVALUE 1.00e-01
US-09-864-761-48936
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US-09-740-638-2
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Patent No. US20020006656A1
GENERAL INFORMATION:
APPLICANT: HOLIOWAY, James L.
TITLE OF INVENTION: ZCY95: A Member of the Cystatin TITLE OF INVENTION: Superfamily
FILE REFERENCE: 99-104
                                                                                                                                                                Query Match 42.1%; Score 107; DB 9; Length 145; Best Local Similarity 39.1%; Pred. No. 1.1e-06; Matches 18; Conservative 15; Mismatches 13; Indels
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                                                                             ch 43.3%; Score 110; DB 9; I Similarity 100.0%; Pred. No. 1.2e-07; 21; Conservative 0; Mismatches 0;
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3: pir3:*
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NKESDDKYHFRIFRVLKVQRQVTDHLBYHLNVEMQWTTCQKPET 44

Que Bes Mat	RESULT 2 \$10587 Cystatin C - rat C;Species: Rattus sp. (rat) C;Date: 21-Nov-1993 #sequence C;Accession: \$10587 R;Esnard, F; Esnard, A.; Fau Biol. Chem. Hoppe-Seyler 371(A;Title: Rat cystatin C: the A;Reference number: \$10587; M A;Accession: \$10587 A;Status: preliminary A;Molecule type: protein A;Residues: 1-120 <esn> A;Note: 43-Asn was also found A;Note: the sequence from Fig C;Superfamily: cystatin; cyst F;9-120/Domain: cystatin homo</esn>	Que Bes Mat Qy	RESULT A45361 Cystat C;Spec C;Date C;Acce R;Corn MO1.E A;Refe A;Acce A;Acce A;Resi A;Cros A;Cros A;Cros A;Cros A;Cros A;Cros		33333333333333333333333333333333333333
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imi	rat lattus love-19 lov	ch 1 simi 18; 1 NKE 1 NKE	ated us mu un-19 A453 G.A.; nOl. nOl. nol		
Match 40.6% 40.6% 40.2% 43.2%	trus sp. (rat) trus sp. (rat) v-1993 #sequence_revis S10587 Esnard, A.; Faucher, oppe-Seyler 371 (Suppl. cystatin C: the comple umber: S10587; MUID:90 S10587 liminary pe: protein 1-20 <esn> n was also found equence from Fig. 2 is cystatin; cystatin h n: cystatin homology <</esn>	43.7%; Similarity 42.9%; 8; Conservative 1 NKESDDKYHFRIFRVLKVQ	epididymal sculus (ho sculus (ho sculus (ho s) #sequen for corgebin-C fo, 1653-16 gene: a ur. A45361; fol nucle; not nucle; not cons s: GB:S499 extracter, cystatin h		222.6 222.4 222.2 222.0 222.0 222.0 221.7 221.7 221.7 221.7 221.7 221.7 221.7
40. 43. vative	rat) quence_rev quence_rev ; Faucher r 371(Supp ; the comp ; the comp 587; MUID: 587; MUID: 60und om Fig. 2 ; cystatin n homology	43. 42. 42. vative FRIFRVI : : : FLVDKII	ymal specific (house mouse) quence_revisionin-Crist, M.C. 33-1664, 1992 a unique test a unique test a unique test cacid cacid cacid (cacid (s49926; NID:936196) S49926; NID:93 (549926; NID:93 (549926) NID:93		1585 1141 325 200 588 617 1617 164 480 480 527 527 527 527 527 527 904 1421
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2; Length 120; -06; 14; Indels	change	DB 2; Length 139; .8e-07; .se 11; Indels vENGWTTCOKP 42 :: : vQISRSNCKKP 95	Jame (fragment) #text_change gene related t 280328 al translation al translation AC35390.1; PID BIP:118813)		probable protein-t cystatin S precurs conserved hypothet secreted phosphopr L-fucose isomerase L-fucose isomerase nitrate reductase hypothetical protein F1K23.12 [probable enzyme (i probable enzyme yb probable membrane nitrate reductase hypothetical protein F1K23.12 [probable enzyme yb probable membrane nitrate reductase hypothetical protein F1K23.12 [probable membrane nitrate reductase nitrate reductase hypothetical protein F1K23.12 [probable membrane nitrate reductase nitrate nitra
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cystatin C precursor - rat (fragment)
C;Species: Rattus norvegicus (Norway rat)
C;Species: Rattus norvegicus (Norway rat)
C;Date: 01-Dec-1993 #sequence revision 03-Aug-1995 #text_change 16-Jul-1999
C;Accession: S07085; S01337; $21109
R;Cole, T.; Dickson, P.W.; Esnard, F.; Averill, S.; Risbridger, G.P.; Gauthier, F.; Schr
Eur. J. Biochem. 186, 35-42, 1989
A;Title: The cDNA structure and expression analysis of the genes for the cysteine protein A;Reference number: S07085; MUID:90092122; PMID:2689174
A;Accession: S07085
A;Status: preliminary
                                                                                                                                                                                 A;Molecule type: protein
A;Residues: 1-112 <HIR>
C;Superfamily: cystatin; cystatin homology
C;Keywords: colostrum; cysteine proteinase inhibitor
F;2-112/Domain: cystatin homology <CYS>
F;48-52/Region: inhibitory #status predicted
F;66-76,90-110/Disulfide bonds: #status predicted
                                                                                                                                                                                                                                                                                                                                                             R;Hirado, M.; Tsunasawa, S.; Sakiyama, F.; Niinobe, M.; Fujii, S. FEBS Lett. 186, 41-45, 1985
A;Title: Complete amino acid sequence of bovine colostrum low-M-r A;Reference number: A01271; MUID:85231205; PMID:3891407
A;Accession: A01271
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A;Molecule type: protein
A;Residues: 8,'XX',11-20 <ES2>
C;Superfamily: cystatin; cystatin homology
C;Keywords: cystaine proteinase inhibitor
F;16-127/Domain: cystatin homology <CYS>
F;80-90,104-124/Disulfide bonds: #status predicted
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A;Rosidues: 8-49 < ESN>
A;Residues: 8-49 < ESN>
R;Esnard, A:; Esnard, F:; Guillou, F:; Gauthier, F.
FEBS Lett. 300, 131-135, 1992
A;Title: Production of the cysteine proteinase inhibitor cystatin C by rat Sertoli
A;Reference number: S21109; MUID:92225121; PMID:1563513
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N;Alternate names: thiol proteinase inhibitor
C;Species: Bos primigenius taurus (cattle)
C;Date: 28-Feb-1986 #sequence_revision 28-Feb-1986 #text_change 06-Dec-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: EMBL:X16957; NID:g56041; PIDN:CAA34831.1; R;Esnard, A.; Esnard, F.; Faucher, D.; Gauthier, F. FEBS Lett. 236, 475-478, 1988
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A;Reference number: S01337; MUID:88313020; PMID:3044831
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A; Residues: 1-127 < COL>
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1 NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPE 43
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41.9%; Pred. No. 1.1e-05;
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A,Cross-references: EMBL:M59470; NID:g192911; PIDN:AAA63298.1; PID:g192912 C;Superfamily: cystatin; cystatin homology F;29-140/Domain: cystatin homology <CYS>
                                                                                                                                                                                                                                                                                                                                                                   R;Solem, M.; Rawson, C.; Lindburg, K.; Barnes, D.
Biochem. Biophys. Res. Commun. 172, 945-951, 1990
A;Tille: Transforming growth factor beta regulates cystatin
A;Reference number: A36163; MUID:91054522; PMID:2241983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cystatin C precursor - mouse
C;Species: Mus musculus (hou
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                                                                                                                                                                                                                                                                                                     A; Molecule type: mRNA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                               Accession: A36163
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                                                                                                              Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mus musculus (house mouse)
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                                                                                                                 Similarity
                                           NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPET 44
NKGSNDAYHSRAIQVVRARKQLVAGVNYFFDVEMGRTTCTKSQT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NKRSNDAYQSRVVRVVRARKQVVSGMNYFLDVELGRTTCTKSQ 70
                                                                                           Conservative
                                                                                        37.4%; Score 95; DB 2;
40.9%; Pred. No. 3.5e-05;
tive 10; Mismatches 16
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N;Alternate names: cystatin 1; cysteine proteinase inhibitor; egg-white cystatin C;Species: Gallus gallus (chicken)
C;Species: Gallus gallus (chicken)
C;Date: 03-Aug-1984 #sequence revision 12-Apr-1996 #text_change 29-Oct-1999
C;Accession: A34456; A01274; S01461; S48159; S04008; JN0789
R;Colella, R.; Sakaguchi, Y.; Nagase, H.; Bird, J.W.C.
J. Biol. Chem. 264, 17164-17169, 1989
A;Title: Chicken egg white cystatin. Molecular cloning, nucleotide sequence, and A;Reference number: A34456; MUID:90008873; PMID:2793849
A;Accession: A34456 A;Cross-references: GB:J05077; NID:g211714; PIDN:AAA48744.1; PID:g21171: R;Schwabe, C.; Anastasi, A.; Crow, H.; McDonald, J.K.; Barrett, A.J. Biochem. J. 217, 813-817, 1984
A;Title: Cystatin. Amino acid sequence and possible secondary structure A;Reference number: A01274; MUID:84178305; PMID:6712597
A;Accession: A01274 A; Molecule type: mRNA A; Residues: 1-139 <COL> cystatin precursor - chicken and tissue

A; Molecule type: protein
A; Residues: 24-139 <SCH>
A; Residues: 24-139 <SCH>
R; Turk, V.; Brzin, J.; Longer, M.; Ritonja, A.; Eropkin, M.; Borchart, U.; Machleidt, W. Hoppe-Seyler's Z. Physiol. Chem. 364, 1487-1496, 1983
A; Title: Protein inhibitors of cysteine proteinases. III. Amino-acid sequence of cystatir A; Reference number: S01461; MUID:84110059; PMID:6662498
A; Accession: S01461

A; Molecule type: protein A; Residues: 24-139 < TUR> R; Anastasi A.; Brown, M.A.; Kembhavi, A.A.; Nicklin, Biochem. J. 211, 129-138, 1983 M.J.H.; Sayers,

A;Title: Cystatin, a protein inhibitor of cysteine proteinases. A;Reference number: A37514; MUID:83256421; PMID:6409085 A;Reference number: Characterization of protein A;Contents: annotation; Characterization of protein R;Grubb, A; Lofberg, H.; Barrett, A.J. FEBS Lett. 170, 370-374, 1984 A;Title: The disulphide bridges of human cystatin C (gamma-trace

Improved

purification Sunter,

C.A.;

D.C. fro

A; Reference number: S01462 Schulze, A.J.; Engh, (gamma-trace) and R.A.; Genenger, chicken G.; Machleidt, cystatin.

A;Contents annotation; disulfide bonds A;Contents annotation; disulfide bonds R;Auerswald, E.A.; Naegler, D.K.; Schulze, Eur. J. Biochem. 224, 407-415, 1994 A;Title: Production, inhibitory activity, folding and conformational analysis of an N-ter

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A;Note: authors failed to translate the codon for residue 115-Tyr C;Comment: This protein binds tightly to and inhibits a variety of cy C;Genetics:
A;Genetics:
A;Gene: Csn
A;Introns: 76/3; 114/3
C;Superfamily: cystatin; cystatin homology
C;Superfamily: cystatin; cystatin homology
C;Superfamily: cystatin, sequence #status predicted <SIG>F;1-23/Domain: signal sequence #status predicted <SIG>F;24-139/Product: cystatin, long form #status experimental <CYLF>F;30-139/Domain: cystatin, homology <CTC/SF>F;30-139/Domain: cystatin, short form #status experimental <CYSF>F;36-80/Region: inhibitory #status predicted
F;76-80/Region: inhibitory #status predicted
F;74-104/118-138/Disulfide bonds: #status experimental
A;Molecule type: mRNA
A;Residues: 1-146 <AB2>
A;Coss-references: EMBL:XOS607; NID:g30371; PIDN:CAA29096.1; PID:g755738
A;Cross-references: EMBL:XOS607; NID:g30371; PIDN:CAA29096.1; PID:g755738
R;Levy, E.; Lopez-Otin, C.; Ghiso, J.; Geltner, D.; Frangione, B.
J. Exp. Med. 169, 1771-1778, 1989
A;Title: Stroke in Icelandic patients with hereditary amyloid angiopathy is A;Reference number: JL0095; MUID:89235594; PMID:2541223
A;Accession: JL0095
                                                                                                                                                                                                                                                                                    A;Molecule type: DNA
A;Residues: 1-146 <AB1 >
A;References: EMBL:X52255; NID:g30257; PIDN:CAA36497.1; PID:g296643
R;Abrahamson, M.; Grubb, A.; Olafsson, I.; Lundwall, A.
FEBS Lett. 216, 229-233, 1987
FEBS Lett. 216, 229-233, 1987
A;Reference number: S00004; MUID:87219149; PMID:3495457
A;Accession: S00004
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A;Residues: 1-139 <CO2>
A;Cross-references: GB.M95725
A;Note: authors failed to translate the codon for residue 115-Tyr
C;Comment: This protein binds tightly to and inhibits a variety of cysteine proteinases
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C;Species: Homo sapiens (man)
C;Date: 06-U1-1982 #sequence revision 31-Mar-1991 #text change 08-Dec-2000
C;Accession: S10216; S00004; TL0095; A33400; S02751; A01270; A25434; S12288; A32732; A60
C;Accession: S10216; S00004; TL0095; A33400; S02751; A01270; A25434; S12288; A32732; A60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R;Abrahamson, M.; Olafsson, I.; Palsdottir, A.; Ulvsbaeck, M.; Lundwall, Blochem. J. 268, 287-294, 1990
A;Title: Structure and expression of the human cystatin C gene.
A;Reference number: S10216; MUID:90303202; PMID:2363674
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A; Residues: 97-114 < LAB>
R; Colella, R.; Bird, J.W.C.
Gene 130, 175-181, 193
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A;Title: The cysteine proteinase inhibitor chicken cystatin is a phosphoprotein. A;Reference number: S04008; MUID:89252033; PMID:2721673
A;Accession: S04008
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A;Accession: S48159
A;Status: preliminary
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A; Residues: 24-139 < AUE >
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Matches 18
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18; Conservative
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43.9%;
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R;Olafsson, 1.,
J. Clin. !
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A;Residues: 27-49,'XX',52-64 <OLA>
A;Residues: 27-49,'XX',52-64 <OLA>
A;Rote: this protein, purified from cerebrospinal fluid of patients with the autosomal e defective gene is not present in CSF but is found instead in amyloid deposits
R;Popovic, T.; Brzin, J.; Ritonja, A.; Turk, V.
Biol. Chem. Hoppe-Seyler 371, 575-580, 1990
A;Title: Different forms of human cystatin C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R;Olafsson, I.; Gudmundsson, G.; Abrahamson, M.; Jensson, O.; Grubb, A. Scand. J. Clin. Lab. Invest. 50, 85-93, 1990
A;Title: The amino terminal portion of cerebrospinal fluid cystatin C in hereditary A;Reference number: A60552; MUID:90193615; PMID:2315647
A;Accession: A60552
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A;Title: Isolation of a sequence encoding human cystatin C. Conservation of exon-intron (A;Reference number: S02751; MUID:89076507; PMID:3264504
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A;Cross-references: GB:X61681; NID:g30367; PIDN:CAA43856.2; PID:g4490944
A;Note: the cystatin C gene isolated from the brain of an Icelandic pation
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Biochem. Biophys. Res. Commun. 118, 103-109, 1984
A;Title: Human cystatin, a new protein inhibitor of cysteine proteinases.
A;Reference number: A32732; MUID:84128015; PMID:6365094
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A;Residues: 37-93,'Q','95-146 <GHI>
R;Residues: 37-93,'Q','95-146 <GHI>
R;Turk, V.; Brzin, J.; Longer, M.; Ritonja, A.; Bropkin, M.; Borchart, U.; Machleidt, R;Turk, V.; Brzin, J.; Longer, M.; Ritonja, A.; Bropkin, M.; Borchart, U.; Machleidt, Hoppe-Seyler's Z. Physiol. Chem. 364, 1487-1496, 1983
A;Title: Protein inhibitors of cysteine proteinases. III. Amino-acid sequence of cysteine proteinases. A;Reference number: S01461; MUID:84110059; PMID:6662498
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Proc. Natl. Acad. Sci. U.S.A. 79, 3024-3027, 1982
Proc. Natl. Acad. Sci. U.S.A. 79, 3024-3027, 1982
A;Title: Human gamma-trace, a basic microprotein: amino
A;Reference number: A01270; MUID:82222268; PMID:6283552
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A;Residues: 82-119 <GH2>
A;Cross-references: EMBL:M27769
                                                                 A;Experimental source: urine, kidney disease A;Note: truncated forms with amino ends at por R;Grubb, A.; Lofberg, H.; Barrett, A.J. FEBS Lett. 170, 370-374, 1984
A;Title: The disulphide bridges of human cyst
                                                                                                                                                                                                                                                                                                                            A;Reference number: S10607; MUID:91025625; PMID:2222856
A;Accession: S10607
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A;Residues: 27-131, 'S',133-146 <GRU>
A;Residues: 27-131, 'S',133-146 <GRU>
R;Ghiso, J.; Jensson, O.; Frangione, B.
Proc. Natl. Acad. Sci. U.S.A. 83, 2974-2978, 1986
Proc. Natl. Acad. Sci. U.S.A. 83, 2974-2978, 1986
A;Title: Amyloid fibrils in hereditary cerebral hemorrhage with amyloidosis of Iceland
A;Reference number: A25434; MUID:86206076; PMID:3517880
A;Accession: A25434
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A; Residues: 1-24, 'T', 26-146 <SAI>
A;Reference number: S01462
A;Contents: annotation; disulfide bonds
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A;Residues: 27-53 <POP>
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A; Consider.

A; Consider.

A; Consider.

A; Consider.

A; Consider.

A; Note: the authors translated the codon GAC for residue 129 as Asn

R; Saitoh, E; Isemura, S; Sanada, K; Kim, H.S.; Smithies, O; Maeda, N.

Biol. Chem. Hoppe-Seyler 369, 191-197, 1988

A; Title: Cystatin superfamily. Evidence that family II cystatin genes are evolutionarily

A; Reference number: $02489; MUID:89076505; PMID:3202964

A; Accession: $02499; MUID:89076505; PMID:3202964

A; Nolecule type: DNA

A; Residues: 21-141 cSA2>

A; Isemura, S; Saitoh, E; Sanada, K.

J. Biochem. 102, 693-704, 1987

A; Reference number: A41422; MUID:88139220; PMID:3436950

A; Accession: A41422

A; Molecule type: protein

A; Residues: 25-141 cISE>

R; Isemura, S; Saitoh, E; Sanada, K.; Isemura, M; Ito, S.

R; Isemura, S; Saitoh, E; Sanada, K.; Isemura, M; Ito, S.

R; Isemura, S; Saitoh, E; Sanada, K.; Isemura, M; Ito, S.
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A;Title: Local pH-dependent confo
A;Reference number: $55305; MUID:
A;Accession: $55305
A;Status: preliminary
A;Molecule type: protein
A;Residues: 27-49;106-146 <BER>
C;Comment: This protein autoimmun
C;Comment: This protein is an inh
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Gene 61, 3
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A; Map position: 20p11.2-20p11.2
A; Map position: 20p11.2-20p11.2
C; Superfamily: Cystatin; Cystatin homology
C; Keywords: amyloid; Cystatine proteinase inhibitor; extracellular protein; hydroxyprolin; F;1-26/Domain: signal sequence #status predicted <SIG>F;27-146/Product: Cystatin C Hatatus experimental <MAT>
F;35-146/Domain: cystatin homology <CYS>
F;81-85/Region: inhibitory #status predicted
F;29/Modified site: hydroxyproline (Fro) (partial) #status experimental
A;Reference number: A27015
A;Accession: B27015
A;Molecule type: protein
A;Residues: 25-134,'D',136-141 <IS2>
C;Genetics:
A;Gene: GDB:CST2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C;Species: Homo sapiens (man)
C;Date: 31-Mar-1989 #sequence_revision 30-Jun-1989 #text_change 16-Jul-1999
C;Accession: B29632; S02490; A41422; B27015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Accession: B29632
A;Molecule type: DNA
A;Residues: 1-141 <SAI>
                                                                                                                                                                                          in Cysteine Proteinases and A; Title: Cystatin S and the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Title: Human cysteine-proteinase inhibitors: nucleotide sequence analysis A;Reference number: A91589; MUID:88185836; PMID:3446578
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Best Local S
Matches 17
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Comment: This protein is an inhibitor of cysteine proteinases and comment: A mutant cystatin C, with 94-Gln, is deposited in heredit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      :Title: Local pH-dependent conformational changes leading to proteolytic susceptibility
:Reference number: S55305; MUID:94379969; PMID:8092991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99-109,123-143/Disulfide bonds: #status experimental
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              , E.; Kim, H.S.; Smithies, 329-338, 1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 l Similarity
17; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               37.0%; Score 94; DB 1; 39.5%; Pred. No. 5e-05; tive 11; Mismatches
                                                                                                                                                                                             Sanada, K.; Isemura, M.; Ito, d Their Inhibitors, Turk, V., e related cysteine proteinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         O.; Maeda,
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ed., pp.497-505, Walter
inhibitors in human sali
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A; Note: sequ
C; Superfamil:
C; Keywords:
                                                                                      A; Molecule type: protein A; Residues: 1-111 < RIT> C; Superfamily: ----
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A;Map position: 20p11.2-20p11.2
C;Superfamily: cystatin; cystatin homology
F;30-141/Domain: cystatin homology <CYS>
                                                                                                                                                        A;Title: Amino acid sequence of a cystatin A;Reference number: A28793; MUID:88076861; A;Accession: A28793
                                                                                                                                                                                                                                                                                    cystatin - puff adder
C;Species: Bitis arietans (puff adder)
C;Date: 15-Dec-1988 #sequence_revision 15-Dec-1988 #text_change
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A;Residues: 'P',37-57,'A',59-71,'R',73-83,'N',85-126,'M',128-162
A;Cross-references: GS:M60279; NID:g159888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   J. Biol. Chem. 267, 17339-17346, 1992
A;Title: Molecular cloning and characterization of onchocystatin, a cysteine A;Reference number: A43428; MUID:92381053; PMID:1512269
A;Accession: A43428
                                                                                                                                                                                                                         R;Ritonja, A.; Evans, H.J.; Machleidt, W.; Biochem. J. 246, 799-802, 1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: GB:M37105; NID:g159905; PID:g159906
A;Note: sequence extracted from NCBI backbone (NCBIN:111962, NCBIP:111963)
R;Chandrashekar, R; Masood, K., Alvarez, R.M.; Ogunrinade, A.F.; Lujan, R.; Richards J. Clin. Invest. 88, 1460-1466, 1991
J. Clin. Invest. 88, 1460-1466, 1991
A;Title: Molecular cloning and characterization of recombinant parasite antigens for A;Reference number: A33927; MUID:92042729; PMID:1840605
A;Accession: B43927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C;Date: 04-Mar-1993 #sequence_revision 18-Nov-1994 #text_change 17-Mar-2000
C;Accession: A43428; B43927
R;Lustigman, S.; Brotman, B.; Huima, T.; Prince, A.M.; McKerrow, J.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N; Alternate names: cysteine proteinase
                                                                                                                                                                                                                                                                           C; Accession: A28793
                                                                                                                                                                                                                                                                                                                                                                 A28793
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                                                                                                                                                                                                                                                                                                                                                                                         RESULT 10
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A; Residues: 1-162 < LUS>
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Best Local Similarity
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    Matches
                       Query Match
Best Local
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  16;
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                         Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                          NEQSNDEYHLMPIKLLKVSSQVVAGVKYKMDVQVARSQCKK 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               nematode (Onchocerca volvulus)
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                                                                                           cystatin homology
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                       31.5%;
39.0%;
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                     Score 80;
Pred. No.
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Pred. No. 0.0029;
4; Mismatches 1:
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Pred. No. 0.00099
3; Mismatches 1
    Mismatches
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                         0.0025
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    14;
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                                          Length 111;
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                                                                                                                                                                                                    the African puff adder (Bitis
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NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK 41

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C.Species: Homo sapiens (man)
C.Species: Homo sapiens (man)
C.Species: Homo sapiens (man)
C.Accession: A28110; S02489; A29632; A01273; S19279
R.Al-Hashimi, I.; Dickinson, D.P.; Levine, M.J.
J. Biol. Chem. 263, 9381-9387, 1988
A;Title: Purification, molecular cloning, and sequencing of salivary cystatin SA-I.
A;Reference number: A28110; MUID:88243825; PMID:2837486
A;Accession: A28110
A;Molecule type: mRNA
A;References: GB:J03870; NID:g337751; PIDN:AAA60299.1; PID:g337752
A;Cross-references: GB:J03870; NID:g337751; PIDN:AAA60299.1; PID:g337752
R;Saitch, E.; Isemura, S.; Sandada, K.; Kim, H.S.; Smithies, O.; Maeda, N.
Biol. Chem. Hoppe-Seyler 369, 191-197, 1988
Biol. Chem. Hoppe-Seyler 369, 191-197, 1988
Biol. Chem. Hoppe-Seyler 369, 191-197, 1988
A;Title: Cystatin superfamily. Evidence that family II cystatin genes are evolutionarily A;Accession: S02489; MUID:89076505; PMID:3202964
A;Accession: S02489
A;Status: not compared with conceptual translation
A;Residues: 21-141 <SA2-
R;Saitch, E.; Kim, H.S.; Smithies, O.; Maeda, N.
Gene 61, 329-338, 1987
Gene 61, 329-338, 1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Title: A cysteine protease inhibitor stored in the large granules of horseshoe crab A;Title: A cysteine protease inhibitor stored in the large granules of horseshoe crab A;Reference number: JC4536; MUID:97063312; PMID:8907180

A;Recession: JC4536

A;Rocession: PC4123

A;Residues: 1-13 <AGA>
A;Residues: 1-13 <AGA>
A;Residues: 1-13 <AGA>
A;Residues: 26-57;60-105;107-113;115-128 <AG2>
A;Residues: 26-57;60-105;107-113;115-128 <AG2>
A;Residues: 26-57;60-105;107-113;115-128 <AG2>
A;Residues: 26-57;60-105;107-113;115-128 <AG2>
C;Comment: This protein belongs to the cystatin family and it is a single-chain protein trity against Gram-negative bacteria, defense against invading microbes, and response C;Superfamily: cystatin homology
C;Expwords: cystatin; cystatin homology
C;Expwords: cystatin signal sequence #status predicted <SIG>
F;20-133/Pomain: signal sequence #status predicted <SIG>
F;20-133/Pomain: cystatin homology CCYS>
F;20/Modified site: pyrrolidone carboxylic acid (Gln) (in mature form) #status predicted
F;85-98,109-129/Disulfide bonds: #status predicted
A, Molecule type: DNA
A, Residues: 1-86, 'I', 88
R, Isemura, S.; Saitoh,
FEBS Lett. 198, 145-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C;Species: Tachypleus tridentatus
C;Date: 15-Feb-1996 #sequence revision 19-Apr-1996 #text_change 03-Dec-1999
C;Accession: JC4536; PC4122
R;Agarwala, K.L.; Kawabata, S.; Hirata, M.; Miyagi, M.; Tsunasawa, S.; Iwanaga, J. Biochem. 119, 85-94, 1996
                                                                                                                                                A;Reference number: A91589;
A;Accession: A29632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cystatin SN precursor (validated) N;Alternate names: cystatin SA-I
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                                                                                                                                                                                                                   A;Title: Human cysteine-proteinase inhibitors: nucleotide sequence analysis of three me
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    47
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SSRSNSLYHHKLLKIHKARTQVVSGINYEVFIETGTTTCKKSE 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA
,'I',88-141 <SAI>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29.5%; Score 75; DB 2; Length 133; 30.2%; Pred. No. 0.014; tive 11; Mismatches 19; Indels
                                     Sanada,
                                                                                                                                                                                  MUID:88185836; PMID:3446578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 human
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <u>..</u>
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   Cystatin precursor - chum salmon
CySpecies: Oncorhynchus keta (chum salmon)
C;Date: 26-Sep-1996 #sequence_revision 01-
C;Accession: JC4918
                                                                                                                                                JC4918
                                                                                                                                                                                  RESULT 14
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C;Comment: The intracellular role of this protein C;Superfamily: cystatin; cystatin homology C;Keywords: cysteine proteinase inhibitor F;2-11/Domain: cystatin homology <CYS>F;48-52/Region: inhibitory
                                                                                                                                                                                                                                                                                                                                                                                                                       R;Koide, Y., Noso, T.
Biotechnol. Biochem. 58, 164-169, 1994
Biosci. Biotechnol. Biochem. 58, 164-169, 1994
A;Title: The complete amino acid sequence of pituitary cystatin
A;Reference number: JC2040; MUID:94162738; PMID:7764512
A;Accession: JC2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Cross-references: GDB:119815; OMIM:123855
A;Map position: 20p11.2-20p11.2
C;Superfamily: Cystatin; Cystatin homology
C;Keywords: cysteine proteinase inhibitor; extracellular protein;
F;1-20/Domain: signal sequence #status predicted <SIG-
F;21-141/Product: cystatin SA-I #status experimental <MAT1-
F;29-141/Product: cystatin SN #status experimental <MAT2-
F;30-141/Domain: cystatin SN #status experimental <MAT2-
F;30-141/Domain: cystatin homology <CYS-
F;76-80/Region: inhibitory #status predicted
F;94-104,118-138/Disulfide bonds: #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: protein A; Residues: 29-141 <ISE A; Residues: 29-141 <ISE A; Residues: 29-141 <ISE A; Residues: 29-141 <ISE A; Remasubbu, N.; Reddy, M.S.; Bergey, E.J.; Haraszthy, G.G.; Soni, S.D.; Levine, M.J. Biochem. J. 280, 341-352, 1991
Biochem. J. 280, 341-352, 1991
Biochem. J. 280, 341-352, 1991
A; Title: Large-scale purification and characterization of the major phosphoproteins and A; Reference number: S19279; MUID:92082469; PMID:1747107
A; Accession: S19279
                                                S
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C;Comment: Human saliva appears to contain several cysteine proteinase inhibitors that a ences. Cystatin SN, with a pI of 7.5, is a much better inhibitor of papain and dipeptidy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Title: Characterization of a new cysteine proteinase inhibitor of human saliva, cystati
A;Reference number: A01273; MUID:86164938; PMID:3514272
A;Accession: A01273
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                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: protein A; Residues: 1-111 < KOI>
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                                                                                                                                                                                                                 F;89-109/Disulfide bonds:
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                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Accession: JC2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Date: 14-Jul-1994 #sequence_revision 14-Jul-1994 #text_change 16-Jul-1999
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                                                                                                                                                           Query Match
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                                                                                                                                  Local
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28
                                                                                                     l Similarity
13; Conserv
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15; Conserv
                                                1 NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPE 43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21-55 <RAM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NKATKODYYRRPLRVLRARQQTVGGVNYFFDVEVGRTICTKSQ 98
NKKTNDMFVRQVAKVVNAQKQVVSGMKY I FTVQMGRTPCRK
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                                                                                                        Conservative
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                                                                                                                               28.0%;
                                                                                                                                                                                                                 #status experimental
                                                                                                        13;
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                                                                                                     Score 71; DB 1;
Pred. No. 0.039;
3; Mismatches
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Pred. No. 0.027;
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                                                                                                                                                              DB 1;
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                                                                                                           15,
                                                                                                                                                           Length 111;
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                                                                                                        Indels
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01-Nov-1996

#text_change 21-Jan-2000

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Biochem. J. 280, 341-352, 1991
A;Title: Large-scale purification and characterization of the major A;Reference number: S19279; MUID:92082469; PMID:1747107
A;Accession: S19280
A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: protein
A; Molecule type: protein
A; Residues: 29-134, 'D', 136-141 < ISE>
A; Residues: 29-134, 'D', 136-141 < ISE>
R; Isemura, S.; Saltoh, E.; Ito, S.; Isemura, M.; Sanada, K.
Biochem. 96, 1311-1314, 1984
A; Title: Cystatin S: a cysteine proteinase inhibitor of hur
A; Title: Cystatin S: a cysteine proteinase inhibitor of hur
A; Reference number: A91981; MUID:85104877; PMID:6394600
A; Contents: annotation; inhibitor specificity
A; Contents: annotation; inhibitor specificity
R; Hawke, D.H.; Yuan, P.M.; Wilson, K.J.; Hunkapiller, M.W.
Biochem. Biophys. Res. Commun. 145, 1248-1253, 1987
A; Title: Identification of a long form of cystatin from hur
A; Reference number: A29603; MUID:87270697; PMID:3496880
                                                                                                                                                                                    A; Molecule type: protein
A; Residues: 21-51 < HAW>
A; Residues: 21-51
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R;Lamkin, M.S.; Jensen, J.L.; Setayesh, M.R.; Troxler, R.F.; Oppenheim, F.G.
Arch. Biochem. Biophys. 288, 664-670, 1991
A;Title: Sallvary cystatin SA-III, a potential precursor of the acquired enamel pellicl
A;Reference number: S16500; MUID:91378515; PMID:1898055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Molecule type: protein
A;Residues: 21-134,'D',136-141 <IHU>
R;Isemura, S.; Saitoh, E.; Sanada, K.
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C;Date: 25-Feb-1985 #sequence_revision 08-Feb-1996 #text_change
C;Accession: S17667; S16500; A01272; A29603; S19280; A56608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Title: Isolation and amino acid sequence A; Reference number: A91985; MUID:85054716;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Title: Human salivary cystatin S. Cloning, sequence analysis, A;Reference number: S17667; MUID:91378918; PMID:1898352
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
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J. Biochem. 120,
                                                                                                                                                                                                                                                                                                                                                                                                       A; Accession: A29603
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cystatin S precursor - human
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A; Residues: 1-132 < YA
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. Biochem. 120, 483-487, 1996
.Title: Molecular cloning and gene expression of chum salmon cystatin.
;Reference number: JC4918; MUID:97058289; PMID:8902609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Status: preliminary
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R;Ghinsson, M.; Richardson, C.F.; Bergey, E.J.; Levine, M.J.; Nancollas, G.H.
Arch. Oral Biol. 36, 631-636, 1991
A;Tille: The effects of human salivary cystatins and statherin on hydroxyapatite crystall
A;Reference number: A56608; MUID:92074898; PMID:1741693
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A;Note: authors desigate form without phosphate as cystatin S and form containing one pho C;Comment: This protein strongly inhibits papain and ficin, partially inhibits stem brome
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;211-141/Product: cystatin S #status predicted <MAT>
;30-141/Domain: cystatin homology <CYS>
;76-80/Region: inhibitory #status predicted
;94-104,118-138/Disulfide bonds: #status predicted
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SMART; SM00043; CY; 1.
PROSITE; PS00287; CYSTATIN;
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Genew; HGNC:15959; CST11
                                                                              "Functional annotation of a full-length Nature 409:685-690(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN=C57BL/6J; TISSUE=Epididymis; MEDLINE=21085660; PubMed=11217851;
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30.-MAY-2000 (Rel. 39, Last sequence update)
28.-FEB-2003 (Rel. 41, Last annotation update)
Cystatin-related epididymal spermatogenic protein precursor (Cystatin
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the European Bioinformatics Institute. There are no restrictions
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BAB32061.1;
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. 41:37-46(1995).
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SECONDARY AREA OF CC
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Best Local :
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                                                                                      01-OCT-1993 (Rel. 27, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Cystatin-related epididymal spermatogenic protein
related epididymal specific protein) (Cystatin 8).
                                                                                                                                                                                                                  CST8 MOUSE
P32766; O891
01-OCT-1993
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or send a
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Phillimore B.J.C.T., Prathalingam S.R., Plumb R.W., Ramsay H.,
Rice C.M., Ross M.T., Scott C.E., Sehra H.K., Shownkeen R., Sims S.,
Skuce C.D., Smith M.L., Soderlund C., Steward C.A., Sulston J.E.,
Swann R.M., Sycamore N., Taylor R., Tee L., Thomas D.W., Thorpe A.,
Tracey A., Tromans A.C., Vaudin M., Wallis J.M.,
Whittehead S.L., Whittaker P., Willey D.L., Williams L., Williams S.A.,
Wilming L., Wray P.W., Hubbard T., Durbin R.M., Bentley D.R., Beck S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; AF059244; AAC
EMBL; AL109954; CAE
HSSP; P01034; 1G96
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GO; GO:0004869; F:cysteine pro
InterPro; IPR000010; Cystatin.
                           Bukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                          MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pfam; PF00031; cystatin; 1. SMART; SM00043; CY; 1.
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Oliver K.,
                                                                       Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VARIANT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "The DNA sequence and comparative analysis of human chromosome 20.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     s SWISS-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBL outstation - Buropean Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            exclusively synthesized by the proximal caput epithelium SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUBCELLULAR LOCATION: TISSUE SPECIFICITY: P
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                                                                                                                                                                                                                                                                                                                                                                                         57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AF059244; AAC14707.1;
AL109954; CAB64234.1;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    non-profit institutions as long as its content is in no way and this statement is not removed. Usage by and for commercial requires a license agreement (See http://www.isb-sib.ch/announce/an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                      NKESEDKYVFLVVKTLQAQLQVTNLLBYLIDVEIARSDCRKPLSTN 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              142
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Rodentia;
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50.0%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Signal; Polymorphism.
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PROTEIN.
SECONDARY AREA OF CONTACT (PO)
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N-LINKED (GLCNAC. . . ) (POTENT
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Pred. No. 1.4e-08;
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N-LINKED (GLCNAC. . .) (PO
N-P (in dbSNP:1054633).
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9A3512757E0F4ECD CRC64;
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                        Craniata; Vertebrata;
Sciurognathi; Muridae;
                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
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                                                                                                                                          precursor
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                                                 Euteleostomi;
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RESULT 5
CST8 RAT
ID CST8 RAT
AC O88959;
DT 30-MAY-2000
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STANDARD; (Rel. 39, Created) (Rel. 39, Last seq

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cornwall G.A., Orgebin-Crist M.-C., Hann S.R.;
"The CRES gene: a unique testie-regulated gene
family is highly restricted in its expression to
of the mouse epididymis ";
Mol. Endocrinol. 6:1653-1664(1992).
-!- FUNCTION: Performs a specialized role durin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cornwall G.A., Hsia N., Sutton H.G.; "Structure, alternative splicing and chromosomal localization of the cystatin-related epididymal spermatogenic gene.";
                                                                                                                                                                                                                      CHAIN
                                                                                                                                                                                                                                               InterPro; IPR000010; Cystatin.
Pfam; PF000031; Cystatin; 1.
SMART; SM000043; CY; 1.
Thiol protease inhibitor; Signal.
                                                                                                                                                                                                                                                                                                                                 EMBL; AF091503; AAC61754 1; -.
EMBL; AF090691; AAC36316.1; -.
EMBL; S49926; AAC35390.1; -.
PIR; A45361; A45361.
                                                                                                                                                                                                                                                                                                                                                                                                      entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TISSUE=Epididymis;
MEDLINE=93078799; PubMed=1280328;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Biochem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=99247899; PubMed=10229662;
                                                                                                                                                                                                                                     SIGNAL
                                                                                                                                                                                                                                                                                                       HSSP; P01034; 1G96.
MGD; MGI:107161; Cst8.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE OF 4-142 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SUBCELLULAR LOCATION: Secreted. TISSUE SPECIFICITY: Proximal capuexpression in the testis. Within
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              present
of CRES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        elongating spermatids, whereas within the epididymis it i exclusively synthesized by the proximal caput epithelium. INDUCTION: Testicular factors or hormones other than andrepresent in the testicular fluid may be involved in the reference.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                of CRES gene expression. SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             maturation.
 57
                                                      18;
                                                                   Similarity
                           NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKP 42
NKESEDKYVFLVDKILHAKLQITDRMEYQIDVQISRSNCKKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and CD-1;
                                                                                                            142 AA;
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105
139
39
                                                                                                             16288
                                                                   42.98;
                                                                                43.7%;
                                                                                                            MW;
                                                      13;
                                                                                                                                      N-LINKED
                                                                  Score 111;
Pred. No. 1
                                                                                                                       N-LINKED (GLCNAC. ..) (POTEN N-LINKED (GLCNAC. ..) (POTEN PLWLSLILFIIP -> GTRDEQVGESQK
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BY SIMILARITY.
                                                                                                                                                                                                                     POTENTIAL.
CYSTATIN-RELATED EPIDIDYMAL SPERMATOGENIC
                                                                                                                                                                                                         PROTEIN.
                                                                                                            50B446E98F66673E CRC64;
                                                      Mismatches
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                                                                                В
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                                                                                                                                                                                            CONTACT (POTENTIAL)
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                                                                               Length 142;
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ne regulation
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region
                                                                                                                            REF.
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Best Local S
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SEQUENCE
                                                                                                                                           Cystatin
CST3.
                                                                                                                                                                                                        CYTC RAT P14841;
                                                                                                                                                                                                                                   RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EWBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Rodentia; NCBI_TaxID=10116;
 MEDLINE=9009212; PubMed=2689174; Cole T., Dickson P.W., Bsnard F., Gauthier F., Schreiber G.; "The cDNA structure and expression
                                                                                                   Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                 01-APR-1990
28-FEB-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; AF090692; AAC36317.1; -. HSSP; P01034; 1G96.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cystatin-related epididymal spermatogenic Biochem. J. 340:85-93(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN=Sprague-Dawley; TISSUE=Epid
MEDLINE=99247899; PubMed=10229662;
                                                     STRAIN=Buffalo;
                                                               SEQUENCE FROM N.A.
                                                                                                                              Rattus norvegicus (Rat).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam; PF00031; cystatin; SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A
                                                                                       NCBI_TaxID=10116;
                                                                                                                                                                                            01-APR-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Thiol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Cornwall G.A., Hsia N., Sutton H.G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CST8 OR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cystatin-related epididymal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Structure,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10-OCT-2003 (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUBCELLULAR LOCATION: Secreted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FUNCTION: Performs a specialized role during
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             maturation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protease
                                                                                                                                                                                                                                                                                    57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            norvegicus (Rat).
                                                                                                                                                                                                                                                                                                                                     18;
                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                       C precursor
                                                                                                                                                                                                                                                                                  NKGSEDKYLFLLDKTLHATLQITDRMEYHIDVQISRSNCRKP
                                                                                                                                                                                                                                                                                                      NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IPR000010; Cystatin.
                                                                                                                                                                                                                                                                                                                                                                                   77
95
119
100
142
                                                                                                                                                               (Rel. 14,
(Rel. 14,
(Rel. 41,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alternative splicing and chromosomal localization lated epididymal spermatogenic gene.";
                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                       AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        inhibitor;
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                                                                                                   Chordata;
Rodentia;
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139
100
  and expression
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Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                         ¥.
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BY SIMILARITY.
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N-LINKED (GLCNAC. ...) (PO
N-FB873FAA6B6CAB34 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 spermatogenic protein
                                                                                                                                                                                                                                                                                                                                   Score 106; DB 1;
Pred. No. 5.3e-07;
1; Mismatches 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                CYSTATIN-RELATED EPIDIDYMAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            POTENTIAL
                                                                                                   Craniata; Vertebrata; Euteleostomi;
Sciurognathi; Muridae; Murinae; Rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
                                                                                                                                                                                                                     PRT;
                          Averill F.,
  analysis of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (By similarity).
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                                                                                                                                                                                                                     B
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                         Risbridger
 the genes for the
                                                                                                                                                                                                                                                                                                                                                                                                                                        CONTACT
                                                                                                                                                                                                                                                                                                                                                           Length 142;
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                                                                                                                                                                                                                                                                                                                                                                                                  (POTENTIAL)
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                                                                                                    Rattus.
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ID CYTC RABIT
AC 097862;
DT 16-OCT-2001
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MEDLINE=88313020; PubMed=3044831;
Esnard A., Esnard F., Faucher D., Gaut
"Two rat homologues of human cystatin
                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                        NON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-92225121; PubMed-1563513; Esnard A., Esnard F., Guillou F., Gauth "Production of the cysteine proteinase Sertoli cells.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Esnard F., E
Brillard M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eur. J. Biochem.
                                                                                                                                                                                                                                                                                                                          Thiol
                                                                                                                                                                                                                                                                                                                                                               SMART;
                                                                                                                                                                                                                                                                                                                                                                                                                                    PIR; S07085; S07085.
PIR; S10587; S10587.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; X16957;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N-glycosylation.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=90380276;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE OF 8-127.
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                                                                                                                                                                                                                                                                                                                                          PROSITE;
                                                                                                                                                                                                                                                                                                                                                                             Pfam; PF00031; cystatin;
                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR000010;
                                                                                                                                                                                                                                                                                                                                                                                                                     HSSP; P01034; 1G96
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEBS Lett. 236:475-478(1988)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Rat cystatin C: the complete amino acid sequence reveals a site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 H, and L.
SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JULI COLLS. (1992).

JULIT 300:131-135(1992).

FUNCTION: As an inhibitor of cysteine proteinases, this pronounced in the protein as a language of the language of the language of the protein as a language of the la
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    regulator of this
                                                                                                                                                                                                                                                                                                                          protease
2
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                                                                                          Similarity
NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPET
                                                                                                                                                                                                                                                                                                                                          PS00287;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAA34831.1;
                                                                                                                                                   A,
                                                                                                                                                                                                                                                                                                                          inhibitor;
                                                                                                                                                                                                                                                                                                                                                              CY;
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                                                                                                                                                                                                                                                                                                                                            CYSTATIN;
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18
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90
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25
                                                                                        40.6%;
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                                                                                                                                                                                                                                                                                                                      Signal
                                                                                                                                                                 CYSTATIN C.
REACTIVE SITE.
SECONDARY AREA O
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BY SIMILARITY.
BY SIMILARITY.
A -> E (IN REF.
                                                                          Pred. No. 1.2
l; Mismatches
                                                                                        Score 103;
Pred. No. 1
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                                                                                                                                                 -> E (IN REF. 2)
78F70158B7925853
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                                                                                          .2e-06;
                                                                                                              DB 1;
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                                                                                                            Length 127;
                                                                                                                                                   CRC64;
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                                                                          Indels
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Best Local S
Matches 18
                SEQUENCE
STRAIN-BALB/c; TISSUE-BIGG.,
STRAIN-BALB/c; TISSUE-BIGG.,
MEDIINE-9105452; PubMed-2241983;
MEDIINE-9105452; PubMed-2241983;
Solem M., Rawson C., Lindburg K., B.
Solem M., Rawson C., Lindburg K., B.
Fransforming growth factor beta re
"Transforming growth factor beta re
"Oline embryo (SFME) cells.";
                                                                                                                                                                                                                                                                                                                                           CYTC_MOUSE
P21460;
01-MAY-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DISULFID
DISULFID
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACT_SITE
  Biochem.
                                                                                                                                                                                                                                                                                                                                                                                                          MOUSE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=98424349; Puk
Kobori M., Ikeda Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28-FEB-2003 (Rel. 41, Last annotation update) Cystatin C precursor. CST3.
                                                                                                                                                                                                  Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                     01-FEB-1996
10-OCT-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam; PF00031; cystatin; 1. SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; AB009342; BAA75921.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Large scale isolation of osteoclast-specific genes by an improved method involving the preparation of a subtracted cDNA library.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Kobori M., Ik
Kawashima H.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
STRAIN=Japanese white;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                              NCBI_TaxID=10090;
                                                                                                                                                                                                                                            Mus musculus
                                                                                                                                                                                                                                                                                  Cystatin C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CHAIN
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    -!- SIMILARITY: Belongs to the cystatin family.

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P01034; 1G96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d involving the preparation Cells 3:459-475(1998).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18;
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                                                                                                                                                                                                                                                                                  precursor
                                                                                                                                                                                                                                                                                                   Rel. 33, (Rel. 42,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   39.8%;
nilarity 40.9%;
Conservative 1:
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Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
utheria; Lagomorpha; Leporidae; Oryctolagus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1
29
39
83
101
                                                                                                                                                                                                                                                                                                                                           (Rel. 18, Created)
                                                                                                                                                                                                                                            (Mouse)
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                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CYSTATIN; FALSE NEG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PubMed=9753427;
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148
39
87
111
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Rodentia;
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                                                                                                                                                                                                                                                                                  (Cystatin
                                                                                                                                                                                                                                                                                                   Last sequence up
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13;
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SECONDARY AREA OF CONTACT.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 101; DB 1;
Pred. No. 2.5e-06;
3; Mismatches 13
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CYSTATIN C.
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                                                                                                                                                                                                  Craniata; Vertebrata; I
Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                       172:945-951(1990)
                                                          , Barnes D. regulates
                                                                                                                                                                                                                                                                                                                          update)
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                                                                                                                                                                                                                                                                                                     update
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                                                            cystatin
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 148;
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                                                                                                                                                                                                     Euteleostomi;
; Murinae; Mus
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                                                            serum-free
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    RX MEDLINE=22388257; PubMed=12477932;
RX Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA Brownstein M.J., Ugdin T.B., Toshiyuki S., Carninci P., Prange C.,
RA Brownstein M.J., Ugdin T.B., Toshiyuki S., Carninci P., Prange C.,
RA Brownstein M.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA Richards S., Worley R.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA Miting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA Butterfield Y.S.N., Krzywinski M.I., Schautz J., Myers R.M.,
RGeneration and initial analysis of more than 15,000 full-length
RT human and mouse cDNA sequences.";
Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
C. thought to serve an important physiological role as a local
CC thought to serve an important physiological role as a local
CC thought to serve an important physiological role as a local
CHAIN
ACT SITE
SITE
DISULFID
CONFLICT
CONFLICT
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MEDLINE=21363810; PubMed=11471062;
Ehringer M.A., Thompson J., Conroy O., Xu Y., Yang F.,
Beesson M., Gordon L., Bennett B., Johnson T.E., Sikela
Beesson M., Gordon L., Thompson T. B., Sikela
                                                                                                                                                                                                                                                                                                                      EMBL; M59470; AAA63298.1; --
EMBL; U10098; AAB41056.1; --
EMBL; AP483486; AAL90760.1;
EMBL; AP483487; AAL90761.1;
EMBL; BC002072; AAH02072.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "High-throughput sequence identification of gene coding variants within alcohol-related QTLs.";
Mamm. Genome 12:657-663(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=95137392; PubMed=7835704;
Huh C., Nägle J.W., Kozak C.A., Abrahamson M., Karlsson S.;
"Structural organization, expression and chromosomal mapping
mouse cystatin_C-encoding gene (Cst3).";
                                                                                                                                                                                                                                                     HSSP; P01034; 1G96.
MGD; MGI:102519; CBt3.
                                                                                                                                                                                                                                                                                  PIR; A36163; A36163.
HSSP; P01034; 1G96.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 or send
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for contents
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                                                                                                                                            SIGNAL
                                                                                                                                                               Thiol
                                                                                                                                                                                                                     Pfam; PF00031; cystatin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  entities requires a license agreement (See http://www.isb-sib.ch/announce/
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                                                                                                                                                                                    PROSITE;
                                                                                                                                                                                                                                            InterPro; IPR000010;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                             protease
                                                                                                                                                                                                     SM00043;
                                                                                                                                                                                                                                                                                                                                                                                                                                               an email to license@isb-sib.ch).
                                                                                                                                                                                PS00287;
  21
31
75
93
117
16
84
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; AAL90761.1; -.
; AAH02072.1; -.
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                                                                                                                                                             inhibitor;
                                                                                                                                                                                                       ÿ
                                                                                                                                                                                    CYSTATIN; 1.
  140
31
79
103
137
137
84
                                                                                                                                                                                                                                            Cystatin.
                                                                                                                                                               Signal
CYSTATIN C.
REACTIVE SITE.
SECONDARY AREA OF CONTACT.
BY SIMILARITY.
BY SIMILARITY.
A -> G (IN REF. 1).
L -> F (IN REF. 1).
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SEQUENCE

140

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15531 MW;

3A563406DD58D0F5 CRC64;

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RESULT 9
CYTC_BOVIN
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 Query Match
Best Local Similarity
Matches 18; Conserv
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ACT_SITE
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                                                                                                                                   CHAIN
                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a collaboratic between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on it use by non-profit institutions as long as its content is in no was modified and this statement is not removed. Usage by and for commercia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Olsson S.-L., Ek B., Wilm M., Broberg S., Rask L., B. "Molecular cloning and N-terminal analysis of bovine identification of a full-length N-terminal region.", Biochim. Biophys. Acta 1343:203-210(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE=Cerebrospinal fluid, and Choroid plexus;
MEDLINE=98094199; PubMed=9434110;
Olsson S.-L., Ek R wil-"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Ch
Mammalia; Eutheria; Ce
Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15-JUL-1999 (Rel. 38, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Cystatin C precursor (Colostrum thiol proteinase inhibitor).
                                                                                                                                                                                                                            EMBL; Y10811; CAA71771.1; HSSP; P01034; 1G96.
                                                                                                                                                                                                                                                                                                                                                                                                               proteinase inhibitor.";
FEBS Lett. 186:41-45(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21-JUL-1986 (Rel. 01,
15-JUL-1999 (Rel. 38,
28-FEB-2003 (Rel. 41,
                                                      SEQUENCE
                                                                                                                                                                                       Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                    or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                entities requires a license agreement
                                                                   DISULFID
                                                                               DISULFID
                                                                                                                                                  SIGNAL
                                                                                                                                                                           PROSITE;
                                                                                                                                                                                                                                                                                                                                                                         -!- SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                        Hirado M., Tsunasawa S., Sakiy
"Complete amino acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE=85231205; PubMed=3891407;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=9913;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bos taurus (Bovine).
                                                                                                                                                                                                                InterPro; IPR000010; Cystatin.
                                                                                                                                                                                                                                                                                                                                                                                         -!- MASS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE OF 37-148.
                                                                                                                                                                                                                                                                                                                                                                                     FUNCTION: This is a thiol proteinase inhibitor. MASS SPECTROMETRY: MW=13420; METHOD=MALDI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BOVIN
                                                                                                                                                             protease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPET 44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                            PS00287;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NKGSNDAYHSRAIQVVRARKQLVAGVNYFLDVEMGRTTCTKSQT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                      148
  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                      B
                                                                                                                                                            inhibitor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                           CYSTATIN;
                                                                               30
148
31
40
88
112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                      16265 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           39.0%;
               38.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sakiyama F.,
                                                                                                                                                             Signal; Pyrrolidone
  10;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 99;
Pred. No.
               Score 98;
Pred. No.
                                                     BY SIMILARITY.
BY SIMILARITY.
; EE740FE37CFB9F0E CRC64;
                                                                                                         PYRROLIDONE CORRECTIVE SITE
                                                                                             SECONDARY AREA
                                                                                                                                    CYSTATIN C.
                                                                                                                                                                                                                                                                                                                                                                                                                                           Ö,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
ore 98; DB 1; Le ed. No. 6.3e-06; Mismatches 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                           bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           No. 4.4e-06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             148
                                                                                                                                                                                                                                                                                                                                                                                                                                         Niinobe M., ne colostrum
                                                                                                                                                                                                                                                                                (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 1;
                                                                                                                     CARBOXYLIC ACID (PROBABLE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rask L., Bjoerk I.; of bovine cystatin
                                                                                             ဝှု
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15; Indels
                                                                                                                                                             carboxylic
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                          Length 148;
                                                                                             CONTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                         Fujii :
  Indels
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                                                                                                                                                            acid.
                                                                                                                                                                                                                                                                                                                                                                                                                                         cysteine
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NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPE 43

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RESULT 11
CYT_CHICK
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CYTC_SAISC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                     P01038;
21-JUL-1986
01-OCT-1989
28-FEB-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACT SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15-JUL-1998
15-JUL-1998
                                       Gallus gallus (Chicken).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the European Bioinformatics Institute. There use by non-profit institutions as long as modified and this statement is not removed. U entities requires a license agreement (See htt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cerebrovascular beta-amyloidosis.";
Stroke 27:2080-2085(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Saimiri sciureus (Common squirrel monkey).
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Platyrrhini; Cebidae; Cebinae; Saimiri.
                                                                                     Cystatin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Thiol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; U52028; AAB64051.1;
HSSP; P01034; 1G96.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE=97054523; PubMed=8898820; Wei L.H., Walker L.C., Levy E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28-FEB-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                019093;
                Archosauria; Aves; Neognathae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pfam; PF00031; cystatin; SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Wei L.H., Walker L.C., Levy E.; "Cystatin C. Icelandic-like mutation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=9521;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cystatin C precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROSITE; PS00287;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -!- SIMILARITY: Belongs to the cystatin family
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR000010; Cystatin.
                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                  CHICK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FUNCTION: As an inhibitor of cysteine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           thought to serve an important
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SAISC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protease inhibitor; Amyloid; Signal.

1 26 BY SIMILARITY.

27 146 CYSTATIN C.

ITE 37 37 REACTIVE SITE.
                                                                                                                                                                                                                                                                                                                 61
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                                                                                                                                                                                                                                                                                                                                                         1 NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK 41
                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                   precursor (Egg-white cystatin)
                                                                                                                                                                                                                                                                                                                 NKASNDMYHSRALQVVRARKQI VAGVNYFLDVEMGRTTCTK
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               146 AA;
                                                                                                        (Rel. 01, Created)
(Rel. 12, Last sequence up)
(Rel. 41, Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (Rel. 36, Created)
(Rel. 36, Last sequence update)
(Rel. 41, Last annotation updat
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); Mismatches
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Pred. No.
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BY SIMILARITY.
BY SIMILARITY.
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                    Galliformes; Phasianidae; Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               08196353C0306AA3 CRC64;
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15)
DISULFIDE BONDS.

Note the control of the co
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"The structures of native phosphorylated chicken recombinant unphosphorylated variant in solution.

J. Mol. Biol. 234:1048-1059(1993).

-i-FUNCTION: This protein binds tightly to and inthicly proteases including ficin, papain, and and L. Although isolated from egg white, it is
                         modified
                                                                                     This SWI
                                                                                                                                                                                                                                                                                                                                                                                                                                                             X-RAY CRYSTALLOGRAPHY (2.0 ANGSTROMS).

MEDLINE=89052676; PubMed=3191914;

Bode W., Engh R., Musil D., Thiele U., Huber R., Karshikov A.,

Brzin J., Kos J., Turk V.;

"The 2.0 A X-ray crystal structure of chicken egg white cystatin its possible mode of interaction with cysteine proteinases.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Anastasi A., Brown M.A., Kembhavi A.A., Nic
Sunter D.C., Barrett A.U.,
"Cystatin, a protein inhibitor of cysteine
purification from egg white, characterizati
                                                                     the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=84178305; PubMed=6712597;
Schwabe C., Anastasi A., Crow H., M
"Cystatin. Amino acid sequence and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Chicken serum.";
Biochem. J. 211:129-138(1983)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=84110059; PubMed=6662498; Medline=84110059; PubMed=6662498;
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Hoppe-Seyler's Z.
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Colella R., Sakaguchi Y., Nagase
                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=94087719; PubMed=8263912;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "The cysteine proteinase inhibitor chicken
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European Bioinformatics Institute
by non-profit institute
                                                                                                                                                           SIMILARITY:
                                                                                   SWISS-PROT entry is copyright. It is produced through a ceen the Swiss Institute of Bioinformatics and the EMBL
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egg white cystatin. Molecular cloning, n
ue distribution.";
non-profit institu
and this statement
requires a license
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                         institutions as long as its content atement is not removed. Usage by a
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l. Chem. 364:1487-1496(1983).
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possible secondary structure.";
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oved. Usage by and for (See http://www.isb-sib.
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                                                                                                                         MEDLINE=87219149; PubMed=3495457;
Abrahamson M., Grubb A., Olafsson I., Lundwall A.;
"Molecular cloning and sequence analysis of cDNA c
precursor of the human cysteine proteinase inhibit
FEBS Lett. 216:229-233(1987).
                                                                                                                                                                                                                                                                                     Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TURN
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                                   TISSUE=Leukocyte;
MEDLINE=90303202; PubMed=2363674;
Abrahamson M., Olafsson I., Palsd
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10-OCT-2003 (Rel. 42, Last annotation update)
Cystatin C precursor (Neuroendocrine basic po
(Post-gamma-globulin).
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                  Jensson
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                      Grubb
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RA Deloukas P., Matthews L.H., Ashurst J., Burton J., Gilbert J.G.R., RA Jones M., Stavrides G., Almeida J.P., Babbage A.K., Bagguley C.L., RA Bailey J., Barlow K.F., Bates K.N., Beard L.M., Beare D.M., RA Bailey J., Barlow K.F., Bates K.N., Beard L.M., Beare D.M., Barlow K.F., Bates K.N., Beard L.M., Brown A.J., RA Buck D., Burrill W.D., Butler A.P., Carder C., Carter N.P., RA Buck D., Burrill W.D., Butler A.P., Carder C., Carter N.P., RA Chapman J.C., Clamp M., Clark G., Clark L.N., Clark S.Y., Clee C.M., RA Clegg S., Cobley V.E., Collier R.E., Connor R.E., Corby N.R., RA Clegg S., Cobley V.E., Collier R.E., Connor R.B., Corby N.R., RA Clegg S., Cobley V.E., Collier R.E., Connor R.B., Gorliliam R., Hall R.E., RA Clegg S., Cobley V.E., Heath P.D., Ho S., Holden J.L., Howden P.J., RA Hammond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J., RA Huckle E., Hunt A.R., Hunt S.E., Jekosch K., Johnson C.M., Johnson D., RA Huckle E., Hunt A.R., King A., Knights A., Laird G.K., Lawlor S., Lavada G.K., Lawlor S., RA Kay M.P., Kimberley A.M., King A., Knights A., Laird G.K., Lawlor S., RA Mareh V.L., Matrin S.L., McConnachie L.J., McLay K., McMurray A.A., RA Milne S.A., Mistry D., Moore M.J.F., Mullikin J.C., Nickerson T., RA Philliams S.A., Patel R., Pearce T.A.V., Peck A.I., Philliams S.A., Patel R., Pearce T.A.V., Peck A.I., Patel R., Soott C.B., Sebra H.K., Shownkeen R., Sims S., Swann R.M., Sycamore N., Taylor R., Tee L., Thomas D.W., Thorpe A., RA Whitehead S.L., Whittaker P., Willey D.L., Walliams L., Williams S.A., RA Wilniang L., Wray P.W., Hubbard T., Durbin R.M., Bentley D.R., Beck S., RA ROGERS J.
XX MEDINE=22388257; PubMed=12477932;

XX Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,

XX Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,

XX Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

XX Altschul S.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,

XX Altschenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

XX Interest M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,

XX Hausher M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,

XX Altschards M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,

XX Altschards S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,

XX Raha S.S., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,

XX Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

XX Villalon D.K., Muzny D.M., Sodergren B.J., Lu X., Gibbs R.A.,

XX Villalon D.K., Muzny D.M., Sodergren B.J., Lu X., Gibbs R.A.,

XX Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,

XX Miting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,

XX Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dickinson D.P., "Acquisition of epithelial cell
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Isemura S., Sanada I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Levy E., Lopez-Otin C., Ghiso J., Geltner D., "Stroke in Icelandic patients with hereditary related to a mutation in the cystatin C gene,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE=89235594; PubMed=2541223;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "The human cystatin C gene (CST3) is a materially which is localized on chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
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[3]
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414:865-871(2001)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PubMed=11780052;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PubMed=2764935;
ni L.M., Eddy R.L.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                     comparative analysis of human chromosome 20.";
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numan gamma-trace,
presence in the
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Abrahamson M., Jonsdottir S., Olafsson I., Jensson O., Gru
Mereditary cystatin C amyloid angiopathy: identification
disease-causing mutation and specific diagnosis by polymer
                                                                                                                                                                                                                                                                                                                                                                                                                                  "Human cystatin C, an amyloidogenic three-dimensional domain swapping."; Nat. Struct. Biol. 8:316-320(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Protein inhibitors of cysteine proteinases. of cystatin from chicken egg white."; Hoppe-Seyler's Z. Physiol. Chem. 364:1487-149 [10]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.; Schneration and initial analysis of more than 15,000 full-length human and mouse cDNA sequences."; Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903 (2002).
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Abrahamson M., Jaskolski M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Human cystatin, a new protein inhibitor of Biochem. Biophys. Res. Commun. 118:103-109(1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=84128015; PubMed=6365094; Brzin J., Popovic T., Turk V.;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=21173909; PubMed=11276250;
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Turk V., Brzin J., Longer M., Ritonja
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                                                                                                                                                                                                                                                                                                                                     reaction based analysis."
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEBS Lett. 170:370-374(1984).
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                                                                                                                                                                                                                             SUBUNIT: Homodimer.
TISSUE SPECIFICITY: Expressed in highest
                                                                                                                                                                                                                                                                                           FUNCTION: As an inhibitor of cysteine proteinases, thought to serve an important physiological role a
                                                                                                                                                                                                              vas deferens, brain, thymus,
submandibular gland.
DISEASE: Defects in CST3 are
                                                                                                                                 characteristics of amyloid. SIMILARITY: Belongs to the cystatin family
                                                                                                                                                                       DISEASE: Defects in CST3 are a cause of hereditary cerebral hemorrhage with amyloidosis (HCHWA) [MIM:105150]; also known as cerebral amyloid angiopathy (CAA) or cerebroarterial amyloidosis Icelandic type. HCHWA is characterized by a thickening of the
                                                                                                                                                           cerebral arteries walls with deposition
                                                                                                                                                                                                                                                                                 regulator of this enzyme
                                                                                                                                                                                                                                                                                                                         Genet. 89:377-380(1992)
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an cystatin C
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RESULT 13
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SIGNAL 1 26
CHAIN 27 146
ACT_SITE 37 37
SITE 81 85
DISULFID 99 109
DISULFID 123 143
                                                                                                                                                                                                                                                                                                                                                                                    CYTC MACMU
019092;
15-JUL-1998
15-JUL-1998
28-FEB-2003
                                 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation—the EMD conformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                            MEDLINE=97054523; PubMed=8898820; Wei L.H., Walker L.C., Levy E.; "Gystatin C. Icelandic-like mutation cerebrovascular beta-amyloidosis.";
                                                                                                                                                                                                                                                                                                                  Macaca mulatta (Rhesus macaque).
Eukaryota; Metazoa; Chordata; Cr
Mammalia; Eutheria; Primates; Ca
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MIM; 105150;
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                                                                                                                                                                                                                                                                                        NCBI_TaxID=9544;
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                                                                                                                                                                                                                                                                                                                                                                       Cystatin C
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                                                                                                                                          SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                       Nee 27:2080-2085(1996).
FUNCTION: As an inhibitor of cysteine proteinases, this protein thought to serve an important physiological role as a local regulator of this enzyme activity.
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L; M27891; AAA52164.1; JOINED.
L; M27899; AAA52164.1; JOINED.
L; X61681; CAA43856.2; -.
L; X61682; CAA43856.2; JOINED.
L; X61683; CAA43856.2; JOINED.
L; X61683; CAA43856.2; JOINED.
L; AF319564; AAK11570.1; -.
L; AL121894; CAC05424.1; -.
L; BC013083; AAH13083.1; -.
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| Similarity 39.5%;
| 17; Conservative 1
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HGNC:2475; CST3.
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(Rel. 36, Last sequence update)
(Rel. 41, Last annotation updat
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            AAB64050.1;
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Pred. No. 2.1e
11; Mismatches
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REACTIVE SITE.
SECONDARY AREA OF CONTACT
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SEQUENCE:

TISSUE=Egg white;

MEDLINE=97420480; PubMed=9276465;

MEDLINE=97420480; PubMed=9276465;

MEDLINE=97420480; PubMed=9276465;

Gerhartz B., Engh R.A., Mentele R., Eckerskorn C., Torquato R.,

Wittman J., Kolb H.J., Machleidt W., Fritz H., Auerswald E.A.;

"Quail cystatin: isolation and characterisation of a new member of

"Quail cystatin: isolation and its hypothetical interaction with cathepsin
                                                                                         DISULFID
DISULFID
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SEQUENCE
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15-JUL-1998 (Rel. 36, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Cystatin (Egg-white cystatin).
Coturnix coturnix japonica (Japanese quail).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianin
                                                                                                                                                                                     Pfam; PF00031; cystatin; 1. SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
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Pfam; PF00031; Cystatin; 1.
SMART; SM000043; CY; 1.
PROSITE; PS00287; CYSTATIN; 1.
                                                                                                                                                                                                                        -!- SIMILARITY: Belongs to the HSSP; P01038; 1CEW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Thiol
                                                                                                                                                                           PROSITE; PS00287;
                                                                                                                                                                                                                                                          -1- FUNCTION: This protein binds tightly to and
                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=93934;
                                                                                                                                                                                                              InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COTJA
                                                                                                                                                                                                                                               cathepsin B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protease inhibitor; Amyloid; Signal.
L 1 26 BY SIMILARITY
27 146 CYSTATIN C.
မ
             1 NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPE
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NKASNDKYSSRVVRIISAKQQLVSGIKYIMEVEIGRTTCPK
                                                                                                                                                                                                             IPR000010; Cystatin.
                                                                                       95
116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   146 AA;
                                              Conservative
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; inhibitor; Phosphorylation.
; nhibitor; Phosphorylation.
SECONDARY AREA OF
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                                                                                                                                                                           CYSTATIN; 1.
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37
85
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143
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81
115
                                                                                          13093 MW;
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39.5%;
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                                            Score 90; DB
Pred. No. 5.5e
11; Mismatches
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REACTIVE SITE.
SECONDARY AREA
BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 94; DB 1; L
Pred. No. 2.1e-05;
1; Mismatches 15;
                                                                                                       PHOSPHORYLATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                          48248621053A2F70 CRC64;
                                                                                                                                                                                                                                    cystatin family
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    F0B3BB774A29DF26 CRC64;
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                                                       DB 1;
5.5e-05;
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                                              14; Indels
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RESULT 15 CSTL_HUMAN ID CSTL_HUMAN

STANDARD;

PRT:

165

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RA Deloukas P., Matthews L.H., Ashurst J., Burton J., Gilbert J.G.R., RA Jones M., Stavrides G., Almeida J.P., Babbage A.K., Bagguley C.L., RA Bailey J., Barlow K.F., Bates K.N., Beard L.M., Beare D.M., RA Bailey J.P., Bird C.P., Blakey S.E., Bridgeman A.M., Brown A.J., Beasley O.P., Bird C.P., Blakey S.E., Bridgeman A.M., Brown A.J., RA Beasley O.P., Bird C.P., Butler R.P., Carder C., Carter N.P., RA Chagman J.C., Clamp M., Clark G., Clark L.N., Clark S.Y., Clee C.M., RA Clegg S., Cobley V.E., Collier R.E., Connor R.E., Corby N.R., RA Clegg S., Cobley V.E., Collier R.E., Connor R.E., Corby N.R., RA Clegg S., Cobley V.E., Collier R.E., Connor R.E., Corby N.R., RA Cligg S., Cobley V.E., Fraser A., French L., Garner P., RA Ellington A.G., Frankland J.A., Fraser A., French L., Garner P., RA Huckle E., Hunt A.R., Hunt S.E., Jekosch K., Johnson C.M., Johnson D., RA Huckle E., Hunt A.R., Hunt S.E., Jekosch K., Johnson C.M., Johnson D., RA Huckle E., Hunt A.R., Hunt S.E., Jekosch K., Johnson C.M., Johnson D., RA Huckle E., Hunt A.R., Hunt S.E., Jekosch K., Johnson C.M., Johnson D., RA Huckle E., Hunt S.L., McConnachie L.J., McLay K., McMurray A.A., Lehvaeslaiho M.H., Leversha M.A., Lloyd C., Lloyd D.M., Lovell J.D., RA Marsh V.L., Martin S.L., McConnachie L.J., McLay K., McMurray A.A., RA Milne S.A., Mistry D., Moore M.J.F., Mullikin J.C., Nickerson T., RA Millimore B.J.C.T., Parell R., Pearce T.A.V., Peck A.I., RA Phillimore B.J.C.T., Prathalingam S.R., Plumb R.W., Ramssy H., RA Swung R.M., Sycamore N., Taylor R., Tee L., Thomas D.W., Thorpe A., RA Williams C., Whittaker P., Willey D.L., Wallis J.M., Thorpe A., RA Willehead S.L., Whittaker P., Willey D.L., Williams L., Williams S.A., RA Willehead S.L., Whittaker P., Willey D.L., Williams L., Williams S.A., RA Milme S.J., Laway P.W., Hubbard T., Durbin R.M., Bentley D.R., Beck S., RA RA Milley D.R., Beck S.,
Query Match
Best Local Similarity
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Cystatin-like
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SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         use by non-profit institutions as rung was by and for commercial modified and this statement is not removed. Usage by and for commercial modified and this statement is not removed. Usage by and for commercial modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way used the content of the co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens (Human)
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "The DNA sequence and comparative Nature 414:865-871(2001).
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P01038; 1A90.
                                                                                                                                                                                                                                                                                                                                                                                                             protease
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                                                                                                                                                                                                                                                                                                                                                                                                NC:15950, ....
; IERROUGO10; Cystatin.
PS00287; CYSTATIN; FALSE NEG.
PS00287; CYSTATIN; FALSE NEG.
PS00287; CYSTATIN; Signal.
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Chordata; Craniata; Vertebrata; Euteleostomi;
Primates; Catarrhini; Hominidae; Homo.
                                                                            19312 MW;
34.3%;
27.3%;
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annotation update)
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87;
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0.0002;
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                     Length 165;
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                                                                   Matches
113
                4
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RNDTSN 118
                KPETTN
                                NNASNDTYLYRVQRLIRSQMQERVSHWMLGVHTNSTTDSRQLTTGVEYIVTVKIGWTKCK
                                                 NKESDDKYHFRIFRVLKVQ----
                                                                   Conservative
                46
                                                                   15;
                                                                    Mismatches
                                                                   13;
                                                  -ROVIDHLEYHLNVEMOWTTCO
                                                                    Indels
                                                                   Gaps
                                  112
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Search Job tim time completed: March 18, ne : 5.47619 secs 2004, 14:16:11

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Minimum
Maximum
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Maximum Match 100%
Listing first 45 summaries
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                                                                                                                                                                                                                                                                                                                                                                                                            Searched:
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seq length: 2000000000
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1: sp_archea:*

2: sp_bacteria

3: sp_fungi:*

4: sp_human:*
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                                                                                                                                                                                                                                                                                                                                                                                                                                     Gapext 0.5
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

16	15	14	13	12	11	10	9	œ	7	0	v	4.	ω	N	_	Result No.
72	72	72	76	77	80	81	81	92	92	99	110	113	113	151	254	Score
28.3	28.3	28.3	29.9	30.3	31.5	31.9	31.9	36.2	36.2	39.0	43.3	44.5	44.5	59.4	100.0	Query Match Length
149	146	125	425	140	161	148	109	112	112	140	103	141	141	139	138	ength 1
H	11	v	w	Ľ	v	v	v	13	13	1	4	11	11	11	4	BB
Q9D1B1	Q8K397	Q25620	Q12700	Q80Y72	016159	Q9NH95	Q9TY65	Q98SR3	Q98SR4	Q9EPX9	Q8WXU5	Q80ZN5	Q9DAP1	Q8K5A3	Q8WXU6	ID
Q9d1b1 mus musculu	Q8k397 mus musculu	Q25620 onchocerca	Q12700 debaryomyce	Q80y72 mus musculu	016159 brugia mala	Q9nh95 litomosoide	Q9ty65 onchocerca	Q98er3 acipenser e	Q98sr4 acipenser s	Q9epx9 mus musculu	Q8wxu5 homo sapien	Q80zn5 mus musculu	Q9dap1 mus musculu	Q8k5a3 rattus norv	Q8wxu6 homo sapien	Description

45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
58	58	58	58	58	58.5	58.5	58.5	58.5	59	60	60	60	61	61	61.5	61.5	62	62	62	62	63	64	64	65	67	68	71	71
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Q9NXR3	Q9UJJ2	Q8T9G8	Q9QWL5	Q8TD53	Q81B61	Q28548	940860	9BVM8Q	Q12628	Q7Z465	Q8WYG2	Q8TCY7	Q8BI82	B69064	Q859J0	Q859L1	Q9HCI8	Q8K145	Q9NXS0	Q9H740	Q9URL8	Q88Z07	Q8JFU5	Q7Z4J8	Q9JM84	Q17108	016454	Q8VHC1
homo	Q9ujj2 homo sapien	Q8t9g8 drosophila		Q8td53 homo sapien		Q28548 ovis aries	Q98qy6 mycoplasma	Q8mvb6 ixodes scap	Q12628 kluyveromyc	Q7z465 homo sapien	homo	Q8tcy7 homo sapien	Q8bi82 mus musculu	P90698 brugia mala	Q859j0 staphylococ		Q9hci8 homo sapien	v	Q9nxs0 homo sapien	Q9h740 homo sapien	Q9url8 candida alb	Q88z07 lactobacill	Q8jfu5 brachydanio	Q7z4j8 homo sapien	Q9jm84 mus musculu	Q17108 acanthochei	O16454 caenorhabdi	Q8vhcl rattus norv

ALIGNMENTS

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RESULT 2
Q8K5A3
ID Q8K5
AC Q8K5
DT 01-0
DT 01-0
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                                                                                                                                                                        Query Match
Best Local Similarity
Matches 46; Conserv
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Q8WXU6;
01-MAR-2002
01-MAR-2002
01-JUN-2003
 Q8K5A3;
Q8K5A3;
01-OCT-2002
01-OCT-2002
                                                                                                                                                                                                                              SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

Hamil K.G., Liu Q., Zhang Y.-L., French F.S., Hall S.H.;

"SC13: A novel epididymal specific member of the cystatin family.";

submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.

EMBL; AF335480; AAL71991.1; -.

GO; GO:0004869; F:cysteine protease inhibitor activity; IEA.

InterPro; IPR000010; Cystatin.

Pfam; PF00031; cystatin; 1.

SMART; SM00043; CY; 1.

SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=9606;
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                                                                                                                               1 NKESDDKYHFRIFRVLKVORQVTDHLEYHLNVEMQWTTCQKPETTN 46
                                                                                                                  NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVBMQWTTCQKPETTN
                                                                                                                                                                        100.0%; ilarity 100.0%; Conservative 0
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(TrEMBLrel. 20, Last sequence update)
(TrEMBLrel. 24, Last annotation update)
(TrEMBLrel. 22, Created)
(TrEMBLrel. 22, Last sequence update)
                                             PRELIMINARY;
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                                                                                                                                                                         0;
                                                                                                                                                                        Score 254; DB 4; Length 138; Pred. No. 1.8e-26; Mismatches 0; Indels
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RESULT 3
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RA Arakawa T., Hara M., Pukunishi Y., Konno H., Adachi J., Fukuda S.,

RA Arakawa T., Hara M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,

RA Alzawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,

RA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,

RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,

RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,

RA Kadota K., Matsudy Y., Nikaido I., Pesole G., Quackenbush J.,

RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,

RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,

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RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,

RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,

RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Sarbida M.,

RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Sarbida M., Kamiya M., Lee N.H.,

RA Sakai K., Okido T., Furuno M., Aono H., Sarbida Y., Storch K.-F.,

RA Sakai K., Okido T., Furuno M., Mang K.H., Waltz C., Whittaker C., Wilming L.,

RA Saraki H., Toyo-oka K., Wang K.H., Waltz C., Whittaker C., Wilming L.,

RA Warshawa P., Sarbida R., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
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Q9DAP1;
01-JUN-2001
01-JUN-2001
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Hamil K.G., Hall S.H.;
Submitted (APR-2002) to the EMBL/GenBank/DDBJ databases.
EMBL; APS0129; AAM21709.1; -.
GO; GO:0004869; F:cysteine protease inhibitor activity;
InterPro; IPR000010; Cystatin.
Pfam; PP0001; Cystatin; 1.
SMART; SM00043; CY; 1.
SMART; SM00043; CY; 1.
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Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                     InterPro; IPR000010; Cystatin.
Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                        "Functional annotation of a Nature 409:685-690(2001). EMBL; AK005665; BAB24175.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                               Wynshaw-Boris A., Yoshida K.,
Hayashizaki Y.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN=C57BL/6J; TISSUE=Testis;
MEDLINE=21085660; PubMed=11217851;
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                                                                                                                                                                                                                                                                         HSSP; P01038; 1CEW.
                                                                                                                                                                      ; MGI:1916544; 1700006C19Rik.
GO:0004869; Figysteine protease inhibitor activity; IEA
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Pred. No. 1.5e
12; Mismatches
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Sciurognathi; Muridae;
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Sciurognathi; Muridae; Murinae; Rattus.
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             C20FA0D8B1AC378C CRC64;
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.5e-12;
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T., Fukuda f
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                                                                                                                                                         EMBL; AF335481; AAL71992.1; -
GO; GO:0004869; F:cysteine protease
InterPro; IPR000010; Cystatin.
                                                                                                                                                                                                               Hamil K.G., Liu Q., Zhang Y.-L., French F.S., "SC13: A novel epididymal specific member of t Submitted (JAN-2001) to the EMBL/GenBank/DDBJ
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01-OCT-2003 (TrEMBLrel. 25,
RIKEN cDNA 1700006C19 gene.
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01-JUN-2003
                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa;
Mammalia; Eutheria;
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01-JUN-2003
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01-MAR-2002
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ProDom; PD001231; Cystatin_C/M; 1.
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GO; GO:0004869; F:cysteine protease
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                                                                                                                       SEQUENCE
                                                                                                                                          Pfam;
                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens (Human)
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SMART; SM00043; CY;
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InterPro; IPR003243; Cystatin_C/M.
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                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=9606;
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                                                                                                                                          PF00031;
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21; Conservative
                                                            Similarity
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NKESDDKYHFRIFRVLKVQRQ 21
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            141 AA;
                                                                                                                       103 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                            (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (TrEMBLrel.
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                                                                                                                                          cystatin; 1.
                                                                                                                       12285 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16825 MW;
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                                                                                                                                                                                                                                                                                                                                               Primates;
                                                                                                                                                                                                                                                                                                                                                                    Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chordata;
                                                          43.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             44.5%;
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                                                                                                                                                                                                                                                                                                                                                                                                                            220,
                                                                                                                                                                                                                                            Y.-L., French F.S., Hall S.H.; specific member of the cystatin family.";
                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                            Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Last sequence update)
Last annotation updat
                                                            Score 110;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Created)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No. 2.10
B; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 113; DB 11;
Pred. No. 2.1e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 113; DB 11;
Pred. No. 2.1e-07;
                                                                                                                                                                                                                                                                                                                                               Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
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                                                                                                                         05DD92C47387B022
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                                                                                 DB 4;
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                                                              .9e-07;
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                                                                                                                                                                                  activity; IEA
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                                                                             Length 103;
                                                                                                                         CRC64;
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Best Local (
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Q98SR4;
01-JUN-2001
01-JUN-2001
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Q9EPX9;
01-MAR-2001
01-MAR-2001
                                                                                                              Bai J., Lao H., Ye X., Li Y., Lou J.;
"Molecular cloning and sequence analysis of cy
species of sturgeons.";
Submitted (JAN-2001) to the EMBL/GenBank/DDBJ
EMBL; AF334610; AAK16731.1;
HSSP; P01038; 1A90.
                                                                                                                                                                                                                                                                                                                                                                                                 Cystatin (Fragment).
Acipenser sinensis (Chinese sturgeon).
Eukaryota; Metazoa; Chordata; Circulata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-JUN-2001 (TrEMBLrel. 17, Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VARIANT
VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gage F.H.;
"FGF-2-Responsive neural stem cell
autocrine/paracrine cofactor.";
Neuron 28:385-397(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN-BALB/c;
STRAIN-B21010502; PubMed=11144350;
MEDLINE-21010502; PubMed=11144350;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Cystatin C.
Mus musculus (Mouse).
Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
                    Pfam; PF00031; cystatin; 1. SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pfam; PF00031; cystatin; 1. SMART; SM00043; CY; 1.
                                                                 GO; GO:0004869; F:cysteine protease
InterPro; IPR000010; Cystatin.
                                                                                                                                                                                                                                                                                                                                                                                 Actinopterygii; Chondrostei; Acipenseriformes; Acipenseridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; AF311741; AAG40283.1; -. HSSP; P01034; 1G96.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                TISSUE=Liver;
                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=61970;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR000010; Cystatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GO; GO:0004869; F:cysteine protease inhibitor activity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPET 44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NKGSNDAYHSRAIQVVRARKQLVAGVNYFLDVEMGRTTCTKSQT
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(TrEMBLrel. 16, Last sequence update)
(TrEMBLrel. 24, Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
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16
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15517 MW;
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                                                                                                                                                                                                                                    Li Y., Lou J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10;
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                                                                                                                                                                                                                                                                                                                                                                                                        Craniata; Vertebrata; Euteleostomi;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3A563406DD58D785 CRC64;
                                                                                                                                                                                                                analysis of cystatin cDNA from
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                                                                                             inhibitor
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                                                                                          activity;
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Best Local
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Q9TY65;
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SEQUENCE FROM N.A.
MEDLINE-94336252; PubMed=8058358;
Trenholme K.R., Tree T.I., Gillespie
Parasite Immunol. 16:201-209(1994).
EMBL; S71364; AAC60509.1; -.
GO; GO:0004869; F:cysteine protease
                                                                                                                                                                                                                                                                    Onchocerca volvulus.
Eukaryota; Metazoa; Nematoda; Chromadorea; Spirurida;
Onchocercidae; Onchocerca.
                                                                                                                                                                                                                                                                                                                                                          01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-UN-2003 (TrEMBLrel. 24, Last annotation update)
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Q98SR3;
                                                              "Heterogeneity of IgG antibody responses to cloned One antigens in microfiladermia positive individuals from province, Ecuador.";
                                                                                                                                      Trenholme K.R.,
Bradley J.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; AF334611; AAK16732.1; HSSP; P01038; 1A90.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bai J., Lao H., Ye X., Li Y., Lou J.;
"Molecular cloning and sequence analysis of cystatin cDI
species of sturgeons.";
Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-JUN-2001 (TrEMBLrel. 01-JUN-2003 (TrEMBLrel.
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01-JUN-2001
                                                                                                                                                                                                                                                                                                                                     Antigen maltose binding protein (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GO; GO:0004869; F:cysteine protease
                                                                                                                                                                                                                                               NCBI_TaxID=6282;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NON TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam; PF00031; cystatin; 1.
PROSITE; PS00287; CYSTATIN; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nterPro; IPR000010; Cystatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               l Similarity 43.5
18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NKASNDMYIHRVSKVVKVQKQVVAGIKYIVTVQMGRTSCRK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NKASNDMYIHRVSKVVKVQKQVVAGIKYIVTVQMGRTSCRK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              112 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          112 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (TrEMBLrel. 17, (TrEMBLrel. 17, (TrEMBLrel. 24,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12231 MW; 48ECEBFED8A08C00 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12231 MW; 48ECEBFED8A08C00 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           36.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               36.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11;
  protease inhibitor activity; IEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Created)
Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 92; DB
Pred. No. 0.00
11; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 92; DB 13;
Pred. No. 0.00011;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              inhibitor
                                                                                                                                                         А.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                     109
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                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
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                                                                                                                                                           Guderian R., Maizels R.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 112;
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                                                                                          Onchocerca volvulus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                83
                                                                                                                                                                                                                                                                                                Filarioidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             from
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O1615

O1615

AC 01615

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DT 01-JJ

DT 01-JJ

DT 01-JJ

DT 01-JJ

DE CYSEE

GN BATUGO

OC BUKAN

OC CUKAN

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RN [1]

RN [1]

RP SEQUI

RA Gregg

RL Submin

RA Gregg
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Best Local S
Matches 14
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Best Local (
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q9NH95;
01-OCT-2000
01-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                             016159;
                                                                                                                                                                                                                                                                                                                                   01-JUN-2003 (TrEMBLrel.
Cystatin-type cysteine
                                                                                                                                                                                                                                                                                                                                                                                        01-JAN-1998
01-JAN-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Płam; r...
SMART; SM00043; CY; ...
PROSITE; PS00287; CYSTATIN; 1.
LS-CYSTATIN.
25 148 LS-CYSTATIN.
25 1466 MW; 2950AA89CA5339C9 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pfaff A.W., Hoffmann W.H., Taylor D.W., Schulz-Key H.; "Characterization and immunological procedules of a cystein protease inhibitor of the filarial parasite Licomosoides sigmodontis."; Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR000010; Cystatin.
Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
  SEQUENCE FROM N.A. Gregory W.F., Maiz "Two distinct cyst
                                                                                                                                  SEQUENCE FROM N.A. Gregory W.F., Blaxter
                                                                                                                                                                                                                                  Eukaryota; Metazoa; Ne
Onchocercidae; Brugia.
                                                                                                                                                                                                                                                          Brugia malayi (Filarial nematode worm).
Eukaryota; Metazoa; Nematoda; Chromadorea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; AF229173; AAF35896.1; -.
GO; GO:0004869; F:cysteine protease inhibitor activity; IEA
InterPro; IPR000010; Cystatin.
                                                                                                          Submitted
                                                                                                                                                                                                                                                                                                                  BM-CPI-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Onchocercidae; Litomosoides.
NCBI_TaxID=42156;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q9NH95
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROSITE; PS00287; CYSTATIN; 1.
                                                                                                                                                                                                          NCBI_TaxID=6279;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Nematoda; Chromadorea; Spirurida; Filarioidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ls-cystati
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-JUN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Litomosoides sigmodontis.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   h 31.9%; Score 81; DB 5; Le Similarity 34.1%; Pred. No. 0.0047; 14; Conservative 12; Mismatches 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NOOSNDAYHLMPIKVLKVSSOVVAGMKYKMEIOVARSDCKK 102
                                                                                                          (JUL-1997)
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                                                                                                                                                                                                                                                                                                                                     (TrEMBLrel. 05, Created)
(TrEMBLrel. 05, Last sequence update)
(TrEMBLrel. 24, Last annotation update)
pe cysteine proteinase inhibitor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (TrEMBLrel. 15, Created)
(TrEMBLrel. 15, Last sequence update)
(TrEMBLrel. 24, Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
  Maizels R.M.;
cystatin-type
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       31.9%; Score 81; DB 5; 34.1%; Pred. No. 0.0034; tive 14; Mismatches 1
                                                                                                          ូ
                                                                                                        M.L.,
     cysteine protease inhibitors
                                                                                                          EMBL/GenBank/DDBJ databases
                                                                                                                                  Maizels R.M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3C6B5EF14D8082BB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        161
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                                                                                                                                                                                                                                                             Spirurida; Filarioidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 148;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 109;
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     from
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RESULT 12
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ID Q80Y7
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Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,

A Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

A Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Heich F.,

A Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Heich F.,

A Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Heich F.,

A Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Heich F.,

A Hopkins R.F., Jordan H., Scheer R.A., Rubin G.M., Hong L.,

Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

Biatchenko L., Marusina K., Toshiyuki S., Carninci P., Prange C.,

A Brownstein M.J., Uddin T.B., Toshiyuki S., Carninci P., Prange C.,

A Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,

Basak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,

A Biakes S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,

Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,

A Wilting M., Madan A., Young A.C., Shevchen V., Bouffard G.G.,

Halkesley R.W., Touchman J.W., Green E.D., Dickson M.C.,

Bakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,

Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,

Korzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
Query Match
Best Local !
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                          EMBL; BIO48646; AAH48646:1; -.
EMBL; BIO48646; F:cysteine protease in Interpro; IPR000010; Cystatin.
Interpro; IPR0003243; Cystatin_C/M.
Pfam; PF00031; cystatin; 1.
ProDom; PD001231; Cystatin_C/M; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q80Y72
Q80Y72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; AF013263; AAB69857.1; -.
EMBL; AF177193; AAD51086.1; -.
EMBL; GO:0004869; F:cysteine protease inhibitor activity; IEA
                                                      ProDom; Provers
SMART; SM00043; CY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR000010; Cystatin.
Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
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01-JUN-2003
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SEQUENCE 161 AA; 18406 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        parasitic nematode Brugia malayi.";
Submitted (AUG-1999) to the EMBL/GenBank/DDBJ databases
                                                    SEQUENCE
                                                                                                                                                                                                              Strausberg R.;
                                                                                                                                                                                                                                                                                   and mouse cDNA sequences.";
Proc. Natl. Acad. Sci. U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=22388257; PubMed=12477932;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TISSUE-Testicle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cystatin-like
                                                                                                                                                                                             Submitted
                                                                                                                                                                                                                              TISSUE=Testicle;
                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                  "Generation and initial analysis of more than 15,000 full-length human
                                                                                                                                                                                                                                                                                                                                    Jones S.J., Marra M.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           73
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14;
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                                                                                                                                                                                             (MAR-2003) to the EMBL/GenBank/DDBJ databases
                                                    140 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (TrEMBLrel. (TrEMBLrel.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Chordata;
Rodentia;
                                                    16199 MW; 32633E99C4697DA0 CRC64;
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30.3%;
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Last sequence update)
Last annotation updat
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Pred. No. 0.007;
Score 77; I
Pred. No. 0.
                                                                                                                                                                                                                                                                                   99:16899-16903 (2002)
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Sciurognathi; Muridae;
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DB 11; Length 140; 0.015;
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                                                                                                                                                           activity; IEA
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; Murinae; Mus
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Q25620;
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Q12700;
                                                                                                                                                        antigens
J. Clin.
                                                                                                                                                                     MEDLINE=92042729; PubMed=1840605; Chandrashekar R., Masood K., Alvarez R.M., Ogunrinade PRichards F.O.Jr., Weil G.J., Petroperation of recombinant "Molecular cloning and characterization of recombinant antigens for immunodiagnosis of onchocerciasis.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GO; GO:0004338; F:glucan 1,3-beta-glucosidase activity; IEA.
GO; GO:000453; F:hydrolase activity, hydrolyzing O-glycosyl
GO; GO:0005975; F:carbohydrate metabolism; IEA.
InterPro; IPR001547; Glyco_hydro_5.
PROSITE; PS00659; GLYCOSYL_HYDROL_F5; 1.
SEQUENCE 425 AA; 49127 MW; 57F063ABE2FBF274 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Debaryomyces occidentalis (Yeast) (Schwanniomyces occidentalis). Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes; Saccharomycetales; Debaryomyces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
Exo-1,3-bera-glucanase/1,3-beta-D-glucan glucanohydrolase
                                                                      J. Clin. Invest. 88:1460-1466(1991).
EMBL; M60279; AAA29418:1; -
GO:000404869; F:Cysteine protease
InterPro; IPR000010; Cystatin.
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                           Pfam; PF00031; cystatin; 1. SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=6282;
                                                                                                                                                                                                                                                                                                                                                                                            Onchocercidae;
                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                           Onchocerca volvulus.
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6 (TrEMBLrel. 01,
3 (TrEMBLrel. 24,
                                                                                                                                                                                                                                                                                                                                                                                                                  Metazoa; Nematoda; Chromadorea; Spirurida; Filarioidea;
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CYSTATIN; 1
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Last annotation updat
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Pred. No. 0.066;
0; Mismatches
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GO; GO:0004869; F:cysteine protease inhibitor activity; IEA.
InterPro; IPR000010; Cystatin.
Pfam; PP00031; cystatin; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                      01-OCT-2002 (TrEMBLrel. 22,
01-OCT-2002 (TrEMBLrel. 22,
01-JUN-2003 (TrEMBLrel. 24,
RIKEN CDNA 1110017E11 gene
                                                                                                                                                    SMART;
                                                                                                                                                                                                         Submitted
                                                                                                                                                                                                                 Strausberg R.;
                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                             Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                   Q8K397;
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completed: March
me : 27.5635 secs
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                                                               NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK
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                                            NMGSDSLYYFRDTKVIDAKYQLVAGIKYYLTLDIESTECRK 97
                                                                                                                                                                                                        (APR-2002) to the EMBL/GenBank/DDBJ databases
                                                                                                                              146 AA;
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                                                                                    Conservative
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           18,
                                                                                                                              16380 MW;
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           2004,
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                                                                                   Score 72; DB:
Pred. No. 0.070
13; Mismatches
                                                                                                                                                                                                                                                                                                                 Last sequence update)
Last annotation update)
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Pred. No. 0.065;
4; Mismatches
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Match
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Gapop 10.0 ,
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Aae04315	Abg45267	Abg57540	Aam62992	Aam75805	Abb25688	Aam35913	Abb42110	Add46710	Add46706	Add37980	Adc74335	Ada41112	Ada57231	Aae04434	Aae02405	Aaw78258	Aag65889	Aaw78260	Aaw78153
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ALIGNMENTS

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RESULT 1
AAU79861
Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sper sperm motility; fertilisation; antigenic peptide.
                                                                                                                                                                                                                                                                                                                      AAU79861 standard; peptide;
                                                                                                                                                                                                                                                                            Human cystatin-8 (Zcys8) antigenic fragment #9.
                                                                                                                                                                                                                                                                                          15-JUL-2002
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                                                                                                                                  WPI; 2002-383044/41.
                                                                                                                                               Holloway JL,
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                                                                                                                                                                                                                                  Homo sapiens.
                                                                                                                                                              (ZYMO ) ZYMOGENETICS INC.
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The invention describes an isolated mammalian cystatin-8 (Zcys8) polypeptide (I). (I) is useful for: inhibiting cancer proceagulant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting sparmatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sparm, sparm motility and fertilisation; and as antigenic peptides to generate antibodies. Zcys8 is useful as research reagent for characterising sites of interaction between Zcys8 and its receptor. Zcys8 is useful in enhancing fartilisation during assisted reproduction in humans and in animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcys8. The antibodies are also useful to isolate large

Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.

Claim 2; Page 97; 100pp; English.

888888888**%**& CC polypetide (I). (I) is useful for inhibiting cancer procedulant CC protein in an individual and thus inhibiting the thrombotic events CC associated with cancer; promoting spermatogenesis, modulating seminal CC fluid viscosity, enhancing viability of cryopreserved sperm, sperm CC motility and fertilisation; and as antigenic peptides to generate CC entibodies. Zcys8 is useful as research reagent for characterising sites CC of interaction between Zcys8 and its receptor. Zcys8 is useful in CC enhancing fertilisation during assisted reproduction in humans and in CC enhancing fertilisation during assisted reproduction in humans and in CC enhancing fertilisation during assisted reproduction in humans and in CC enhancing fertilisation during assisted reproduction in humans and in CC enhancing fertilisation during assisted receptor. Zcys8 is useful to screen biological samples like CC presence of Zcys8. The antibodies are also useful to isolate large CC quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes. CC The polymorleotide encoding (I) is useful to detect and to localise the cc expression of a Zcys8 gene in a biological sample and Zcys8 coligonucleotide probes are useful for in vivo diagnosis. The 밁 S Query Match Best Local Matches The polynucleotide encoding (I) is useful to detect and to localise the expression of a Zcys8 gene in a biological sample and Zcys8 oligonucleotide probes are useful for in vivo diagnosis. The polynucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zcys8 gene. This sequence represents an antigenic peptide of human cystatin-8 (Zcys8) Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which let to inhibition of thrombotic events associated with cancer. 01-SEP-2000; 2000US-0230230P Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sper Human cystatin-8 (Zcys8) antigenic fragment #8. 15-JUL-2002 AAU79860; AAU79860 standard; peptide; Sequence Claim 2; Page 97; 100pp; English Holloway JL, 29-AUG-2001; 2001WO-US026868 14-MAR-2002. WO200220567-A2 Homo sapiens. sperm motility; fertilisation; antigenic peptide. (OMYZ) quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes. invention describes an isolated mammalian cystatin-8 (2cys8) 2002-383044/41. 24; ZYMOGENETICS Similarity RQVTDHLEYHLNVEMQWTTCQKPE 24 24 ROVIDHLEYHLNVEMOWITCOKPE 24 ă, Conservative (first entry) Gao Z, 100.0%; Bishop PD; 46 0; Score 138; DB 5; Pred. No. 3.3e-14; Pred. No. 3.3e-14; Length 24 sperm; which leads ٥, Gaps

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                 The invention describes an isolated mammalian cystatin-8 (Zcys8)

CC polypeptide (I). (I) is useful for: inhibiting cancer procoagulant

CC protein in an individual and thus inhibiting the thrombotic events

CC associated with cancer; promoting spermatogenesis, modulating seminal

CC fluid viscosity, enhancing viability of cryopreserved sperm, sperm

CC motility and fertilisation; and as antigenic peptides to generate

CC antibodies. Zcys8 is useful as research reagent for characterising sites

CC of interaction between Zcys8 and its receptor. Zcys8 is useful in

CC enhancing fertilisation during assisted reproduction in humans and in

CC enhancing fertilisation during assisted reproduction in humans and in

CC enhancing fertilisation during assisted reproduction in vitro for the

CC presence of Zcys8. The antibodies are also useful to isolate large

CC quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes.

CC The polynucleotide encoding (I) is useful to detect and to localise the

CC expression of a Zcys8 gene in a biological sample and Zcys8

CC oligonucleotide encoding (I) is useful to detect and to localise the

CC copy number changes, insertions in the Zcys8 gene like aneuploidy, gene

CC copy number changes, insertions, deletions in activate the Zcys8 genes.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 2; Page 97-98; 100pp; English.
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                            of interaction between ZCysB and its receptor. ZCysB is useful in enhancing fertilisation during assisted reproduction in humans and in animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of ZcysB. The antibodies are also useful to isolate large quantities of ZcysB protein and DNA sequences that encode ZcysB genes. The polynucleotide encoding (I) is useful to detect and to localise the expression of a ZcysB gene in a biological sample and ZcysB oligonucleotide probes are useful for in vivo diagnosis. The polynucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation in the ZcysB gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the ZcysB gene. This sequence represents an antigenic peptide of human cystatin-B (ZcysB)
                                                                                                                                                                                                                                                                          polypeptide (I). (I) is useful for: inhibiting cancer procoagulant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm sperm motility and fertilisation; and as antigenic peptides to generate antibodies. Zcys8 is useful as research reagent for characterising sites
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human cystatin-8 (Zcys8) antigenic fragment #12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAU79864;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAU79864 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This sequence represents
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (ZYMO ) ZYMOGENETICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ocal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            motility;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                       Page 98; 100pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RQVTDHLEYHLNVEMQWTTCQKPE 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ROVIDHLEYHLNVEMOWITCOKPE 46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gao Z,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              fertilisation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INC
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                                                                                                                                                                                                                                                                                                                                                                                                                     English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          52
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Pred. No. 7.7e-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            antigenic peptide
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Sequence 52

Query Match

Local

Similarity

100.0%;

Score 138; Pred. No. 9

9.6e-14;

DB 5;

Length 59

Conservative

0,

Mismatches

Indels

0

Gaps

0

Sequence

59

Matches

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RESULT 5
AAUT9866
ID AAUT986
IT IS-J
XX AAUT
XX AAUT
XX AAUT
XX BEEI
XX BEEI
XX WESPEI
XX WOOO
PD 114-W
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PR 01-6
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                                                  quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes. The polynucleotide encoding (I) is useful to detect and to localise the expression of a Zcys8 gene in a biological sample and Zcys8 oligonucleotide probes are useful for in vivo diagnosis. The polynucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zcys8 gene. This sequence represents an antigenic peptide of human cystatin-8 (Zcys8)
                                                                                                                                                                                                                                                                                                                                                         of interaction between Zcys8 and its receptor. Zcys8 is useful in enhancing fertilisation during assisted reproduction in humans and in animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcys8. The antibodies are also useful to isolate large
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  polypeptide (I). (I) is useful for: inhibiting cancer procoagulant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm motility and fertilisation; and as antigenic peptides to generate antibodies. Zcys8 is useful as research reagent for characterising sites
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sper
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 2; Page 99; 100pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2002-383044/41.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Holloway JL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-SEP-2000; 2000US-0230230P
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human cystatin-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15-JUL-2002
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200220567-A2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (ZYMO ) ZYMOGENETICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ROVIDHLEYHLNVEMOWITCOKPE 42
   A,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          describes an isolated mammalian cystatin-8 (Zcys8)
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Best Local S
                                                                                                                                            Matches
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to inhibition of
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larity 100.0%;
Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gao
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   describes an isolated mammalian cystatin-8 (Zcys8)

[]. (I) is useful for: inhibiting cancer procoagulant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                thrombotic events associated with cancer.
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                                                                                                                                        Score 138; DB 5;
Pred. No. 1.4e-13;
; Mismatches 0;
       45
                                                                                                                                                                                                             Length 80;
                                                                                                                                            Indels
                                                                                                                                            0,
                                                                                                                                            Gaps
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RESULT 7
AAU79853
ID 7823
ID 7
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                                                           S
                                                                                                                                                                                                                                                                                                                                                       motility and fertilisation; and as antigenic peptides to generate cantibodies. Zcys8 is useful as research reagent for characterising sites of interaction between Zcys8 and its receptor. Zcys8 is useful in cerhancing fertilisation during assisted reproduction in humans and in canimals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcys8. The antibodies are also useful to isolate large creamence of Zcys8 protein and DNA sequences that encode Zcys8 genes. The polynucleotide encoding (I) is useful to detect and to localise the capperssion of a Zcys8 gene in a biological sample and Zcys8 coligonucleotide probes are useful for in vivo diagnosis. The polynucleotide encoding (I) is useful in determining whether a subject's copy number changes, insertions, deletions, restrictions site changes and rearrangements and genetic alterations that inactivate the Zcys8 gene. This sequence represents an antigenic fragment of human cystatin-8
                                                                                                                                   Matches
                                                                                                                                                               Query Match
Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-SEP-2000; 2000US-0230230P
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                polypeptide (1). (1) is useful for: inhibiting cancer procoagulant protein in an individual and thus inhibiting the thrombotic events
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 2; Page 94; 100pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               spermatogenesis, and inhibiting cancer procoagulant to inhibition of thrombotic events associated with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Holloway JL,
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                                                                                                                                                                                                                                                                Sequence 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The invention describes an isolated mammalian cystatin-8 (Zcys8)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   29-AUG-2001; 2001WO-US026868.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (ZYMO ) ZYMOGENETICS
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52
                                                                                                                                   24;
ROVIDHLEYHLNVEMOWTICOKPE 75
                                      RQVTDHLEYHLNVEMQWTTCQKPE 24
                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                    A,
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                                                                                                                                                               100.0%;
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                                                                                                                                                                   Score 138; DB 5;
Pred. No. 2.1e-13
                                                                                                                                   Mismatches
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                                                                                                                                                                                              Length 115;
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RESULT 8 AAU79854

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RESULT 9
AAU79852
ID AAU7
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                                                                                                                                                                                                                                                         protein in an individual and thus inhibiting the thrombotic events cassociated with cancer; promoting spermatogenesis, modulating seminal contility and fertilisation; and as antigenic peptides to generate motility and fertilisation; and as antigenic peptides to generate seminal contility and fertilisation; and as antigenic peptides to generate antibodies. Zcys8 is useful as research reagent for characterising sites contained fertilisation during assisted reproduction in humans and in continuous contained for the screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcys8 The antibodies are also useful to isolate large contained for the polynucleotide encoding (I) is useful to detect and to localise the expression of a Zcys8 gene in a biological sample and Zcys8 gene contained encoding (I) is useful to detect and to localise the conjecutive encoding (I) is useful to detect and zcys8 gene copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that insertions that Ecys8 gene.
                                                                                                                                                                                   Matches
                                                                                                                                                                                                   Query Match
Best Local S
AAU79852;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation; antigenic fragment.
                                AAU79852 standard; protein; 137 AA.
                                                                                                                                                                                                                                                       Sequence 117
                                                                                                                                                                                                                                                                                       This sequence represents an antigenic fragment of human cystatin-8 (Zcys8)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The invention describes an isolated mammalian cystatin-8 (Zcys8) polypeptide (1). (1) is useful for: inhibiting cancer procoagula
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim
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                                                                                                                                                                                     24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2; Page 94-95; 100pp; English.
                                                                                                                     5
4
                                                                                                                                                   1 ROVIDHLEYHLNVEMONTICOKPE 24
                                                                                                                                                                                                       Similarity
                                                                                                                                                                                     Conservative
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                                                                                                                                                                                     0
                                                                                                                                                                                                     Score 138; DB 5;
Pred. No. 2.1e-13;
                                                                                                                                                                                     Mismatches
                                                                                                                                                                                     0
                                                                                                                                                                                                                   Length 117;
                                                                                                                                                                                     Indels
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RESULT 10
AAU79862
ID AAU79
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AC AAU79
XX
AC AAU79
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XX
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XX
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                                                                                                                                                                                                                                                                                                                                                             CC associated with cancer; promoting spermatogenesis, modulating seminal CC fluid viscosity, enhancing viability of cryopreserved sperm, sperm CC motility and fertilisation; and as antigenic peptides to generate CC antibodies. Zcys8 is useful as research reagent for characterising sites CC of interaction between Zcys8 and its receptor. Zcys8 is useful in CC enhancing fertilisation during assisted reproduction in humans and in CC enhancing fertilisation during assisted reproduction in humans and in CC animals. Anti-(1) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the CC presence of Zcys8. The antibodies are also useful to isolate large CC quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes. CC The polynucleotide encoding (1) is useful to detect and to localise the CC expression of a Zcys8 gene in a biological sample and Zcys8 gones CC convocates are useful for in vivo diagnosis. The CC convocates contain a materions in the Zcys8 gene like aneuploidy, gene CC convocates contain a materions deleterions, restriction site chances and
                                                                                                                                                                                                                                                                                                 Query Match
Best Local (
                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                           Sequence 137 AA;
                                                                                                                                                                                                                                                                                                                                                                                            copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zcys8 gene. This is the amino acid sequence of human cystatin-8 (Zcys8)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          polypeptide (I). (I) is useful for: inhibiting cancer procoagulant protein in an individual and thus inhibiting the thrombotic events
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The invention describes an isolated mammalian cystatin-8 (Zcys8) polypeptide (I). (I) is useful for: inhibiting cancer procoagula
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 2; Page 93-94; 100pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ( DMYZ)
                                                                                                                                                                                                                                                                                                 Local Similarity
                                                                                                                                                                                                     74
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                                                                                                                                                                                                                                                                               24;
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                                                                                                                                                                                                                            RQVTDHLEYHLNVEMQWTTCQKPE 24
                                                                                                                                                                                                     ROVIDHLEYHLNVEMOWTTCOKPE 97
                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gao Z,
                                                                                                                                                                                                                                                                                               100.0%;
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                                                                                                                                                                                                                                                                             0; Mismatches
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                                                                                                                                                                                                                                                                                               Score 138; DB 5;
Pred. No. 2.6e-13;
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                                                                                                                                                                                                                                                                                                                    Length 137;
                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                             0
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15-JUL-2002

(first entry)

AAU79862 standard; peptide; 33

Human

cystatin-8 (Zcys8) antigenic fragment #10

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RESULT 11
AAU79867
ID AAU79
XX
AC AAU79
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DT 15-JL
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DE Humar
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KW Cyste
KW Cyste
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                                                                                                                                                                                                                                                                                                                                                                                                                                                           The invention describes an isolated mammalian cystatin-8 (Zcys8)
CC polypeptide (I). (I) is useful for: inhibiting cancer procoagulant
CC protein in an individual and thus inhibiting the thrombotic events
CC associated with cancer; promoting spermatogenesis, modulating seminal
CC fluid viscosity, enhancing viability of cryopreserved sperm, sperm
CC motility and fertilisation; and as antigenic peptides to generate
CC antibodies. Zcys8 is useful as research reagent for characterising sites
CC of interaction between Zcys8 and its receptor. Zcys8 is useful in
CC enhancing fertilisation during assisted reproduction in humans and in
CC enhancing fertilisation during assisted reproduction in humans and in
CC enhancing fertilisation during assisted reproduction in humans and in
CC enhancing fertilisation and the screen biological samples like
blood, urine, saliva, tissue biopsy and autopsy material in vitro for the
CC presence of Zcys8. The antibodies are also useful to isolate large
CC quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes.
CC The polynucleotide encoding (I) is useful to detect and to localise the
CC polynucleotide probes are useful for in vivo diagnosis. The
CC chromosomes contain a mutation in the Zcys8 gene like anneuploidy, gene
CC copy number changes, insertions, deletions, restriction site changes and
CC rearrangements and genetic alterations that inactivate the Zcys8 gene.
CC This sequence represents an antigenic peptide of human cystatin-8 (Zcys8)
                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
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 Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm;
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                                                           Human cystatin-8 (Zcys8) antigenic fragment #15.
                                                                                                   15-JUL-2002
                                                                                                                                                                           AAU79867 standard; peptide; 48
                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 33
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                                                                                                                                                                                                                                                                                                                                                       23;
                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                 QVTDHLEYHLNVEMQWTTCQKPE
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                                                                                                                                                                                                                                                                                                                                                   96.4%; So ilarity 100.0%; I Conservative 0;
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                                                                                                   entry.
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                                                                                                                                                                                                                                                                                                                                                   Score 133; DB
;; Pred. No. 2.9
0; Mismatches
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cc polypeptide (I). (I) is useful for: inhibiting caucer procession in an individual and thus inhibiting the thrombotic events consisted with cancer; promoting spermatogenesis, modulating seminal clud viscosity, enhancing viability of cryopreserved sperm, sperm contility and fertilisation; and as antigenic peptides to generate contility and fertilisation; and as antigenic peptides to generate contility and fertilisation; and as antigenic peptides to generate contility and fertilisation during assisted respondiction in humans and in contility and fertilisation during assisted reproduction in humans and in contility and fertilisation during assisted reproduction in humans and in contility and fertilisation during assisted reproduction in humans and in contility and fertilisation during assisted reproduction in humans and in contility and the fertility and the section in vitro for the presence of Zcys8. The antibodies are useful to screen biological samples like grantities of Zcys8 protein and DNA sequences that encode Zcys8 genes. CC The polymucleotide encoding (I) is useful to detect and to localise the captession of a Zcys8 gene in a biological sample and Zcys8 genes. The polymucleotide encoding (I) is useful to detect and to localise the copynumber changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zcys8 gene. This sequence represents an antigenic peptide of human cystatin-8 (Zcys8)
                                                                                                                                                                                                                                                                    RESULT 12
ADD46708
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                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The invention describes an isolated mammalian cystatin-8 (Zcys8) polypeptide (I). (I) is useful for: inhibiting cancer procoagula
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
                                                                           Rat; pain; neuronal t
chronic constriction
                                                                                                                                                                                                                                                  ADD46708 standard; protein; 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 48 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 2; Page 99; 100pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Holloway JL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-SEP-2000; 2000US-0230230P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       29-AUG-2001; 2001WO-US026868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200220567-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sperm motility; fertilisation; antigenic peptide
                                                                                                                                 Rat Protein AAC36317, SEQ ID
                                                                                                                                                                        29-JAN-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (ZYMO ) ZYMOGENETICS
                                                                                                                                                                                                                                                                                                                                                                                     12 NVEMOWITCOKPE 24
                                                                                                                                                                                                                                                                                                                                                                                                                             13;
                                                                                                                                                                                                                                                                                                                                                 1 NVEMOWTTCOKPE 13
                                                                           neuronal tissue; gene therapy; spinal segmental nerve injury; nstriction injury; CCI; spared nerve injury; SNI; Chung.
                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                        (first entry
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gao Z,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INC
                                                                                                                                                                                                                                                                                                                                                                                                                                               55.8%;
100.0%;
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                                                                                                                                                                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 77;
Pred. No.
                                                                                                                                   NO 12393
                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 5; 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 48
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0

WO2003016475-A2 Rattus norvegicus

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RESULT 13
ADD46704
ID ADD46
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AC ADD47
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CC claimed are a vector comprising the novel polynucleotide, a host cell comprising the vector, a method for identifying a nucleotide sequence cowhich is differentially regulated in an animal subjected to pain and a cC kit to perform the method, an array, a method for identifying an agent that increases or decreases the expression of the polynucleotide sequence contact is differentially expressed in neuronal tissue of a first animal cC subjected to pain, a method for identifying a compound which regulates the expression of a polynucleotide sequence which is differentially composited to pain, a method for identifying a compound which regulates the expressed in an animal subjected to pain, a method for identifying a compound that regulates the activity of one or more of the composition, a compound that regulates the activity of one or more of the composition, a compound that regulates the activity in an animal of one or more of the polypoptides given in the specification, a method for identifying a compound useful in treating conjugation and a pharmaceutical composition comprising the one or more composition or method in the compound that it is activity is useful for preparing a medicament for treating conjugation in the sequence presented is a rat protein (shown in Table 2 of the specification) which is differentially expressed during pain. Note: the specification which is differentially expressed during pain. Note:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New composition comprising two or more isolated polypeptides, useful for preparing a medicament for treating pain in an animal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14-AUG-2001; 2001US-0312147P.
01-NOV-2001; 2001US-0346382P.
26-NOV-2001; 2001US-0333347P.
Rat; pain; neuronal tissue; gene therapy; spinal segmental nerve injury; chronic constriction injury; CCI; spared nerve injury; SNI; Chung.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The sequence data for this patent did not form part of the printed specification, but was obtained in electronic form directly from W ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 1; Page; 1017pp; English.
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                                                                                                  Rat Protein
                                                                                                                                                                     29-JAN-2004
                                                                                                                                                                                                                                        ADD46704
                                                                                                                                                                                                                                                                                                    ADD46704 standard; protein; 142 AA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27-FEB-2003
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(FARB ) BAYER AG.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 QVTDHLEYHLNVEMQWTTCQKP 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QITDRMEYHIDVQISRSNCRKP
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                                                                                                  AAC36317, SEQ ID NO 12389.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
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                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                51.4%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 71; DB 7;
Pred. No. 0.0064;
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RESULT 14
AAE02404
ID AAE02
XX
AC AAE02
XX
DT 10-AU
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standard; protein;

142

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10-AUG-2001 AAE02404; AAE02404

(first entry)

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                                                                                                                                                                                                                                                  that is differentially expressed in neuronal tissue of a first animal CC subjected to pain, a method for identifying a compound which regulates the expressed in an animal subjected to pain, a method for identifying a compound that regulates the activity of one or more of the polynucleotides, a method for producing a pharmaceutical composition, a compound that regulates the activity of one or more of the polynucleotides, a method for producing a pharmaceutical composition, a comethod for identifying a compound or small molecule that regulates the cativity in an animal of one or more of the polypeptides given in the specification, a method for identifying a compound useful in treating capacity peptides or their antibodies. The polynucleotide or the compound that modulates its activity is useful for preparing a medicament for treating capain (e.g. spinal segmental nerve injury (Chung), chronic constriction conjury (CCI) and spared nerve injury (SNI) in an animal (e.g. gene therapy). The sequence presented is a rat protein (shown in Table 2 of the specification) which is differentially expressed during pain. Note:
                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                claimed are a vector comprising the novel polynucleotide, a host cell comprising the vector, a method for identifying a nucleotide sequence which is differentially regulated in an animal subjected to pain and a kit to perform the method, an array, a method for identifying an agent that increases or decreases the expression of the polynucleotide sequence
                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  or human polynucleotides or a polynucleotide which represents derivative or allelic variation of the nucleic acid sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The invention discloses a composition comprising two
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 1; Page; 1017pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New composition comprising two or more isolated polypeptides, useful for preparing a medicament for treating pain in an animal.
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GENBANK; AAC36317.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14-AUG-2001; 2001US-0312147P
01-NOV-2001; 2001US-0346382P
26-NOV-2001; 2001US-0333347P
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                                                                                                                                                                                            specification, but was obtained in electr
ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14-AUG-2002; 2002WO-US025765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (GEHO ) GEN HOSPITAL CORP.
                                                                                                 Local
                                                                                                                                                                                                                   specification) which is differentially expressed during pain. Note: sequence data for this patent did not form part of the printed cification, but was obtained in electronic form directly from WIPO a
  77
                                                                            l Similarity
10; Conserv
                                     2 OVIDHLEYHLNVEMOWITCOKP 23
QITDRMEYHIDVQISRSNCRKP 98
                                                                                                                                                             142 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          D'urso D,
                                                                              Conservative
                                                                                               51.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Befort
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                                                                            8;
                                                                            Score 71; DB
Pred. No. 0.00
8; Mismatches
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                                                                                                 0.0064;
                                                                                                                      DB 7;
                                                                                                                  Length 142
                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           represents a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             or more isolated rat
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Best Local S
Matches 9
 20-NOV-1998;
28-SEP-1999;
01-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               The present invention relates to cystatin T (also known as zcys3) DNA and protein sequences. Cystatin T is testis specific and is homologous to cystatin-related epididymal specific gene (CRES) and type 2 cystatins. Cystatins inhibit cysteine proteinases and are found with male reproductive tissues and secretions. Cystatin T sequence is useful for modulating spermatogenesis and studying, diagnosing and treating reproductive disorders. The present sequence is murine cystatin-related epididymal specific (CRES) protein
                                                                                                                                                               Mouse; cystatin T; zcys3; testis specific; cystatin-related epididymal specific gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cystatin T polypeptides are useful for modulating spermatogenesis studying, diagnosing and treating reproductive disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20-NOV-1998;
28-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Murine; cystatin CRES; inhibitor;
                                                                            12-JUN-2001.
                                                                                                     US6245529-B1
                                                                                                                            Mus musculus
                                                                                                                                                   sperm
                                                                                                                                                                                                   Mouse cystatin-related epididymal specific
                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Disclosure; Col 45-46; 32pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2001-342846/36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Holloway JL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-NOV-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      spermatogenesis; therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Murine
                                                  17-JUL-2000; 2000US-00617302
                                                                                                                                                                                                                             04-SEP-2001
                                                                                                                                                                                                                                                                             AAE04433 standard; protein; 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (ZYMO ) ZYMOGENETICS INC.
                                                                                                                                                     production;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cystatin-related epididymal specific protein (CRES)
                                                                                                                                                                                                                                                                                                                                                                                          Similarity 9; Conserva
                                                                                                                                                                                                                                                                                                                                         QITDRMEYQIDVQISRSNCKKP 98
                                                                                                                                                                                                                                                                                                                                                                 QVTDHLEYHLNVEMQWTTCQKP 23
                                                                                                                                                                                                                                                                                                                                                                                         45.7%;
ilarity 40.9%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                           A
A
                                                                                                                                                                                                                            (first entry)
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  98US-0109217P.
99US-0156382P.
99US-00431480.
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99US-0156382P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99US-00431480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      T; zcys3; cystatin-related epididymal specific protein; cysteine proteinase; male reproductive tissue; testis; therapy; reproductive disorder.
                                                                                                                                                     antiinfertility.
                                                                                                                                                                                                                                                                                                                                                                                         Score 63; DB 4
Pred. No. 0.11;
8; Mismatches
                                                                                                                                                                                                                                                                              A
                                                                                                                                                                spermatogenesis modulator;
CRES; gene therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                 4.
                                                                                                                                                                                                      (CRES)
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                                                                                                                                                                                                                                                                                                                                                                                                                 Length 142;
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Best Local S
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                                                                                                                                                                                                                                protein which is homologous to mouse testis specific cystatin T (also known as zcys). The cystatin T polynucleotide is useful in gene therapy applications, where it is desired to increase or inhibit cystatin T activity. It is also useful for producing cystatin T polypeptide, as well as for detecting the expression of a cystatin T gene in a biological sample. The cystatin T is useful for modulating spermatogenesis, and may be used to study or modulate that function in in vitro or in vivo systems. In particular, it is also useful for enhancing sperm production, increasing the number of viable sperm in a sample, or enhancing
                                                                                                                                                                                         Sequence 142 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            New polynucleotides encoding testis-specific cystatin-like protein cystatin T, useful in gene therapy for modulating cystatin T activ particularly for modulating spermatogenesis, or enhancing sperm
                                                                                                                                                                                                                          fertilisation
                                                                                                                                                                                                                                                                                                                                                                                  The present sequence is mouse cystatin-related epididymal specific (CRES)
                                                                                                                                                                                                                                                                                                                                                                                                                 Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 production or fertility.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2001-407271/43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (ZYMO ) ZYMOGENETICS INC
completed: March 18, me : 22.7619 secs
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                                                                                            N
                                                                                                                            Similarity 9; Conserv
                                                             QITDRMEYQIDVQISRSNCKKP
                                                                                          OVIDHLEYHLNVEMOWITCOKP
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                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Feldhaus AL;
                                                                                                                                          45.7%;
                2004,
                                                                                                                            Score 63; DB
Pred. No. 0.11
8; Mismatches
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                14:15:00
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                                                                86
                                                                                            23
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Listing first 45 summaries
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1: /cgn2_6/ptodata/2/iaa/5A_COMB.pep:*

2: /cgn2_6/ptodata/2/iaa/5B_COMB.pep:*

3: /cgn2_6/ptodata/2/iaa/6A_COMB.pep:*

4: /cgn2_6/ptodata/2/iaa/6B_COMB.pep:*

5: /cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*

6: /cgn2_6/ptodata/2/iaa/backfiles1.pep:*
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CURRENT FILING DATE: 1999-11-01
EARLIER APPLICATION NUMBER: 60/109,217
EARLIER FILING DATE: 1998-11-20
EARLIER APPLICATION NUMBER: 60/156,382
EARLIER FILING DATE: 1999-09-28
UMMBER OF SEQ ID NOS: 22
SOFTWARE: FASTSEQ for Windows Version 3.0
SEQ ID NO 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; TYPE: PRT ; ORGANISM: Mus musculus US-09-431-480-3
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US-09-431-480-3
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APPLICANT: Holloway, James L.
APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN T
FILE REFERENCE: 98-72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 3, Application US/09431480 Patent No. 6235708
APPLICANT: Holloway, James L.
APPLICANT: Holloway, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN
FILE REFERENCE: 98-72 C1
CURRENT APPLICATION NUMBER: US/09/617,302
CURRENT FILING DATE: 2000-07-17
PRIOR APPLICATION NUMBER: 09/431,480
PRIOR APPLICATION NUMBER: 09/431,480
PRIOR APPLICATION NUMBER: 09/109,217
PRIOR APPLICATION NUMBER: 60/109,217
PRIOR APPLICATION NUMBER: 60/109,217
PRIOR FILING DATE: 1999-11-00
PRIOR APPLICATION NUMBER: 60/156,382
PRIOR FILING DATE: 1999-09-28
NUMBER OF SEQ ID NOS: 22
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nilarity 40.9%;
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US-08-791-522-3
US-09-019-485-4
US-09-314-777-3
US-09-431-480-6
US-09-617-302-6
US-09-241-376-3
US-09-286-319A-47
US-09-986-319A-47
US-09-986-319A-47
US-09-976-594-37
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Pred. No. 0.0092;
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Result No.

Score

Query Match

Length

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seq length: 0
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Scoring table: Sequence: Perfect score:

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Copyright

Title:

US-09-941-314-11 138

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APPLICANT: Holloway, James L.
APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYST
FILE REFERENCE: 98-72 C1
CURRENT APPLICATION NUMBER: US/09/617,302
CURRENT FILING DATE: 2000-07-17
PRIOR APPLICATION NUMBER: 09/431,480
PRIOR FILING DATE: 1999-11-01
PRIOR FILING DATE: 1999-11-01
PRIOR PRILING DATE: 1999-11-01
PRIOR APPLICATION NUMBER: 60/109,217
PRIOR APPLICATION NUMBER: 60/109,217
PRIOR APPLICATION NUMBER: 60/109,217
PRIOR APPLICATION NUMBER: 60/156,382
PRIOR APPLICATION NUMBER: 60/156,382
PRIOR FILING DATE: 1999-09-28
JUMBER OF SEQ ID NOS: 22
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; ORGANISM: Homo sapiens US-09-617-302-2
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US-09-617-302-3
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SEQ ID NO 2
LENGTH: 141
                                                                       SOFTWARE:
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ORGANISM: Homo sapiens
-09-431-480-2
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APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN T
FILE REFERENCE: 98-72
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TYPE: PRT
                                                       LENGTH: 141
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Local Similarity 52.4%;
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US-09-431-480-4
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Patent No. 6235708
GENERAL INFORMATION:
APPLICANT: Holloway, James L.
APPLICANT: Felthaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE
FILE REFERENCE: 98-72
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LENGTH: 142
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Patent No. 6245529
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PRIOR APPLICATION NUMBER: 60/
PRIOR FILING DATE: 1998-11-20
PRIOR APPLICATION NUMBER: 60/
PRIOR FILING DATE: 1999-09-28
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NUMBER OF SEQ ID NOS: 22
SOFTWARE: FastSEQ for Windows Version 3.0
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SOFTWARE: FastSEQ fo
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                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION NUMBER: US/09/617,302
CURRENT FILING DATE: 2000-07-17
PRIOR APPLICATION NUMBER: 09/431,480
PRIOR FILING DATE: 1999-11-01
                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Holloway, James L.
APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN
FILE REFERENCE: 98-72 C1
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                                                                                                                                      TYPE: PRT
ORGANISM: Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: PRT
                                                                                                                                                                       LENGTH:
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Local Similarity 50.0%;
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                      QVTDHLEYHLNVEMQWTTCQKP 23
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QVTNLLEYLIDVEIARSDCRKP 98
QVTNLLEYLIDVEIARSDCRKP
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                                                             Conservative
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Pred. No. 0.13;
6; Mismatches
                                                                         Score 56; DB 3
Pred. No. 0.13;
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Pred. No. 0.028;
4; Mismatches
                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 3;
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                                                                                           Length 142;
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                                                               Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 127 ami-
TYPE:
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Patent No. 6680424
                                                                                                                                                                                                                                                 Sequence 16, Patent No. 6
                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                              GENERAL INFORMATION:
APPLICANT: Atkinso
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COMPUTER READABLE FORM:
MEDIUM TYPE: Ploppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                         APPLICANT: Atkinson, Howard J.
APPLICANT: McPherson, Michael J.
APPLICANT: Urwin, Peter B.
TITLE OF INVENTION: MODIFIED PROTEINASE INHIBITORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTORNEY/AGENT INFORMATION:
NAME: Jackson Esq., David A.
REGISTRATION NUMBER: 26,742
REFERENCE/DOCKET NUMBER: 1321-1-003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MOLECULE TYPE: PI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELECOMMUNICATION INFORMATION: TELEPHONE: 201-487-5800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES: 79
CORRESPONDENCE ADDRESS:
ADDRESSEE: Klauber & Jackson
                                                                                                                      NUMBER OF SEQUENCES: 7
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
COMPUTER READABLE FORM:
                                                    STREET: 411 Hack
CITY: Hackensack
STATE: New Jerse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: US/08/849,303 FILING DATE: 21-MAY-1997 CLASSIFICATION: 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TOPOLOGY: 11
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TLE OF INVENTION: MODIFIED PROTEINASE INHIBITORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CITY: Hackensack
                                 COUNTRY: USA
                                                                                                        ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                            61 KOLVAGINYYLDVEMGRTTCTKSO 84
                                                                                                                                                                                                                                                                                                                                                                                            1 ROVIDHLEYHLNVEMOWITCOKPE 24
                                                                                                                                                                                                                                                                                                                                                                                                                               l Similarity
10; Conserv
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                                                  New Jersey
                                                                                                                                                                                                                                                                    Application US/08849303
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     411 Hackensack Avenue, 4th Floor
                                                                                    411 Hackensack Avenue,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              127 amino acids
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McPherson, Michael J.
Urwin, Peter E.
                                                                                                                                                                                                                                                                                                                                                                                                                             38.4%; Score 53; DB 4; Length 127; ilarity 41.7%; Pred. No. 0.35; Conservative 6; Mismatches 8; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                        Klauber & Jackson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein
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                                                                                      4th Floor
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CURENT FILING DATE: 1998-08-05;
CURENT FILING DATE: 2001-02-02
PRIOR APPLICATION NUMBER: CA99/00717
PRIOR FILING DATE: 1999-08-05
PRIOR PELICATION NUMBER: 60/095,503
PRIOR FILING DATE: 1998-08-05
PRIOR FILING DATE: 1998-08-05
RESULT 10
US-08-858-207A-492
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                                                                                                                                                                                            ; LENGTH: 118
; TYPE: PRT
; ORGANISM: Bos taurus
US-09-775-932-24
                                                                                                                                                                                                                                       NUMBER: PALT SOFTWARE: PALT SEQ ID NO 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-775-932-24
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                                                                                                                                                                                                                                                                                                                                                                                                                                         Patent No. 6534477
GENERAL INFORMATION:
APPLICANT: Univers
                                                                                                                            Query Match 37.7%;
Best Local Similarity 41.7%;
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 24, Application US/09775932
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                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: University of British Columbia TITLE OF INVENTION: Production and use of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS: LENGTH: 112 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PAtentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/849,303
FILING DATE: 21-MAY-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: Jackson Esq., David A.
REGISTRATION NUMBER: 26,742
REFERENCE/DOCKET NUMBER: 1321-1-003
TELECOMMUNICATION INFORMATION:
TELEPHONE: 201-487-5800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOLECULE TYPE:
HYPOTHETICAL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRANDEDNESS:
TOPOLOGY: lir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
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                                                                   53 KOVVSGMNYFLDVELGRTTCTKSQ 76
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                                                                                               1 ROVIDHLEYHLNVEMOWITCOKPE 24
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   112 amino acids
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linear
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Pred. No. 0.44;
                                                                                                                                              Score 52; I
Pred. No. 0.
                                                                                                                                 Mismatches
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Sequence 492, Application US/08858207A Patent No. 6348328

GENERAL INFORMATION:
APPLICANT: Black, Michael
APPLICANT: Hodgson, John

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                                                                                                                                                                                                                                                                                                                Sequence 3, Application US/08472534 Patent No. 5919620
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION UNMBER: 60/017670
FILING DATE: 14-MAY-1996
ATTORNEY/AGENT INFORMATION:
NAME: Gimmi, Edward R
REGISTRATION NUMBER: 38,891
REFERENCE/DOCKET NUMBER: P504
TELECOMPUNICATION INFORMATION:
TELEPHONE: 610-270-4478
                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEX:
INFORMATION FOR SEQ ID NO:
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
                                                                                                                                                                                                  APPLICANT: Hamel, Josee
APPLICANT: Brodeur, Bernard R
APPLICANT: Martin, Denia
TITLE OF INVENTION: HEAT SHOCK PROTEIN HSP72 FROM
TITLE OF INVENTION: STREPTOCCCCUS PNEUMONIAE
NUMBER OF SEQUENCES: 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
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ADDRESSEE: SmithKline Beecham Corporation STREET: 709 Swedeland Road CITY: King of Prussia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Stodola, TITLE OF INVENTION: NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: FastSEQ for Windows Version 2.0 CURRENT APPLICATION DATA:
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MEDIUM TYPE: Diskett
                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS:
                                                                                                                                                   STREET:
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OPERATING SYSTEM:
                                                                                                  COUNTRY:
                                                                                                                    STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEFAX: 610-270-5090
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                                                                                                                                     CITY:
                                                                                                                                                                     ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                 30 RQWTDHFPNGDFMETFLNTQFDWNGIRKP 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11; Conservative
                                                                                    10020
                                                                                                                                    New York
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1251 Avenue of the Americas
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Stodola, Robert
VENTION: No. 6348328el Compounds
                                                                                                   United States of America
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
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 Mismatches

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0.51;
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; ORGANISM: Mus musculus US-09-886-319A-46
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RESULT 13
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                                                                                                                                                                                                                                                                                         SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 46, Application US/09886319A Patent No. 6586185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                     Matches
                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                       APPLICANT: Goppelt, Andreas
TITLE OF INVENTION: Use of Polypeptides or Nucleic Acids for
TITLE OF INVENTION: the Diagnosis or Treatment of Skin Disorders and Wound
TITLE OF INVENTION: the Diagnosis or Treatment of Skin Disorders and Wound
TITLE OF INVENTION: Active Substances
TILE REFERENCE: 50125/014002
CURRENT APPLICATION NUMBER: US/09/886,319A
CURRENT APPLICATION NUMBER: US 60/222,081
PRIOR APPLICATION NUMBER: US 60/222,081
PRIOR FILING DATE: 2000-06-20
PRIOR FILING DATE: 2000-06-20
PRIOR FILING DATE: 2000-06-20
NUMBER: OF SEQ. ID NOS: 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Wolf, Eckard
APPLICANT: Werner, Sabine
APPLICANT: Halle, Jorn-Peter
APPLICANT: Regenbogen, Johann
APPLICANT: Goppelt, Andreas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 714 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                   LENGTH: 140
TYPE: PRT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER: Bi
TELECOMMUNICATION INFORMATION:
TELEPHONE: 212-596-9000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:
NAME: Haley Jr, James F
REGISTRATION NUMBER: 27,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEPHONE: 212-596-90
TELEFAX: 212-596-9090
TELEX: 14-8367
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CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US/08/472,534
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                                                         74
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                                                                                   1 ROVIDHLEYHLNVEMOWTTCOKPE 24
                                                         KOLVAGVNÝFLDVÉMGRTTCTKSO 97
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                                                                                                                                   Conservative
                                                                                                                                                     35.5%;
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                                                                                                                                                       Score 49;
Pred. No. 1
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Pred. No. 9.
                                                                                                                                       Mismatches
                                                                                                                                                                         DB 4;
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                                                                                                                                                                         Length 140;
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US-09-886-319A-48
; Sequence 48, Application US/09886319A
; Patent NO. 6586185
; GENERAL INFORMATION:

APPLICANT: Wolf, Eckard

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; MOLECULE TYPE: US-08-832-535-2
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                                                                                                                                              COMPUTER READABLE FORM:

MEDIUM TYPE: Ploppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOPTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION MUMBER: US/08/832,535
FILING DATE: 03-APR-1997
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: KIMBALL, PAUL C.
REGISTRATION NUMBER: 94.610
REFERENCE/DOCKET NUMBER: PF265
TELECOMMUNICATION INFORMATION:
TELEPHONE: (201) 994-1700
TREFTANY: (201) 994-1700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION NUMBER: DB 10030149.5
PRIOR FILING DATE: 2000-06-20
NUMBER OF SEQ ID NOS: 84
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 48
LENGTH: 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
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APPLICANT: NI, JI
APPLICANT: LI, HA
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CURRENT FILING DATE: 2001-06-20
PRIOR APPLICATION NUMBER: US 60/222,081
PRIOR FILING DATE: 2000-08-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: Use of Polypeptides or Nucleic Acids for TITLE OF INVENTION: the Diagnosis or Treatment of Skin Disorders and Wound TITLE OF INVENTION: Healing and for the Identification of Pharmacologically TITLE OF INVENTION: Active Substances
FILE REFERENCE: 50125/014002
                                                                                               TELEFAX: (201) 994-1744
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        quence 2, Application US/08832535
tent No. 5919658
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ORGANISM: Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PPLICANT:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY:
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                                         TOPOLOGY:
                                                                              LENGTH:
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amino acid
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Regenbogen, Johannes
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LI, HAODONG
YU, GUO-LIANG
GENTZ, REINER
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                    protein
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41.7%;
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Best Local Similarity 47.6
Matches 10; Conservative
                                                                           Query Match 35.5%;
Best Local Similarity 47.6%;
                                                            Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Patent No.
                                                                                                                                                                                                                                               CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: Benson, Robert H.
REGISTRATION NUMBER: 30,446
REFERENCE/DOCKET NUMBER: PF26
TELECOMMUNICATION INFORMATION:
TELEPHONE: 3013098504
                                                                                                                                                                                                                     TELEFAX: 3013098439
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION NUMBER: US/09/019,485
APPLICATION NUMBER: US/09/019,485
                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
LENGTH: 145 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Gentz, Re
APPLICANT: Ni, Jian
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STATE: MD
COUNTRY: US
ZIP: 20850
                                                                                                                                                      LENGTH: 145 amino acids TYPE: amino acid TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET:
                                                                                                                                                                                                                                                                                                                                                             FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE:
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                             2 QVTDHLEYHLNVEMQWTTCQK 22
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QIVKGLKYMLEVEIGRTTCKK 101
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9410 Key West Avenue
                                                                                                                                                                                                                                     3013098439
                                                            Conservative
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Yu, Guo-Liang
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                                                          4; Mismatches
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Pred. No. 1
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Pred. No. 1.9;
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Search completed: March 18, 2004, 14:25:36 Job time : 6.14286 secs

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Perfect score:
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Match
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138
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Listing first 45 summaries
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  US-09-941-314-11
US-09-941-314-13
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US-09-941-314-15
US-09-941-314-3
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Sequence 11, Appl
Sequence 10, Appl
Sequence 13, Appl
Sequence 14, Appl
Sequence 15, Appl
Sequence 3, Appli
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Sequence 12, Appli
Sequence 17, Appl
Sequence 27, Appl
Sequence 37, Appl
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Sequence 2, Appli
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US-09-940-497-4		֓֞֜֜֜֜֜֜֜֜֜֜֜֓֓֓֜֜֜֜֜֓֓֓֓֜֜֜֜֓֓֓֓֓֓֜֜֜֜֓֓֓֡֓֡֓֡֓֜֜֜֜֡֓֡֓֡֓֡֡֓֡	115-10-156-761-12874	US-10-282-122A-57752	US-10-376-564-47	US-10-329-428-3	US-09-969-834-3	-940-497-	30	-969-834-	US-08-849-303-15	-775-932-	٠	-303-	US-09-969-834-1	-09-	US-10-329-428-2	-10-376-9	-10-37	US-10-168-425-14	US-10-282-122A-61129	US-09-775-932-24	US-08-849-303-16	US-08-849-303-19	US-10-235-148-5	-10-006-46	US-09-740-638-5	US-10-235-148-2	US-10-006-467-2
Sequence 4, Appli	3 5	10 Appl	12874	577	4	e u	س -	ω	17,	4	15,	2, _	16,	26	ı, Apı	19	<u>ب</u>	48	46,	14	e 6112		1	1	5, Appl	e 5,	5	٠	Sequence 2, Appli

ALIGNMENTS

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APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
FILE REFERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 11
LENGTH: 24
                                                                                                                                                                                                                                                                                                                                                                                        ; LENGTH: 24
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-941-314-11
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                                                                                                                                 US-09-941-314-10
Sequence 10, Application US/09941314
Patent No. US20020142396A1
GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Processulant Protein
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Patent No. US20020142396A1
GENERAL INFORMATION:
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Best Local Similarity
Matches 24; Conserv
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FILE REFERENCE: 00-81PC

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; ORGANISM: Homo sapiens US-09-941-314-14
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; ORGANISM: Homo sapiens
US-09-941-314-10
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PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 13
LENGTH: 49
TYPE: THE TOTAL PRIOR TO THE TOTAL PRIOR TH
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                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 14, Application US/09941314
Patent No. US20020143396A1
GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its
TITLE OF INVENTION: Inhibit Cancer Procoagulant
FILE REFERENCE: 00-81PC
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Patent No. US20020142396A1
GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
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                                                                                                        SEQ ID NO 14
LENGTH: 52
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Best Local Similarity
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                                                                                                                                                                      CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
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CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
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CURRENT FILING DATE: 2001-08-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein FILE REFERENCE: 00-81PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: PRT
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Pred. No. 3.2e-13;
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FILE REFERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 15
LENGTH: 80
RESULT 7
US-09-941-314-3
; Sequence 3, Application US/09941314
; Patent No. US20020142396A1
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US-09-941-314-15
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                                                                                                                                                                                                                                                            ; ORGANISM: Homo sapiens
US-09-941-314-15
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 16
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                                                                                                                                                                                    Query Match 100.0%; Score 138; Best Local Similarity 100.0%; Pred. No. 5. Matches 24; Conservative 0; Mismatches
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CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its
TITLE OF INVENTION: Inhibit Cancer Procoagulant
FILE REFERENCE: 00-81PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: PRT
ORGANISM: Homo
                                                                                                                                                                                                                                                                                               TYPE: PRT
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100.0%; Pred. No. 3.7e-13;
tive 0; Mismatches 0;
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Protein
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APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammallan Cystatin-8 and Its Use to TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein FILE REFERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 4
LENGTH: 117
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APPLICANT: ZymoGenetics, Inc.

TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to

TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein

FILE REFERENCE: 00-81PC

CURRENT APPLICATION NUMBER: US/09/941,314

CURRENT FILING DATE: 2001-08-29

PRIOR APPLICATION NUMBER: 60/230,230

PRIOR APPLICATION NUMBER: 60/230,230

PRIOR FILING DATE: 2001-09-01

NUMBER OF SEQ ID NOS: 19

SOFTMARE: FastSEQ for Windows Version 4.0

SEQ ID NO 3

LENGTH: 115
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US-09-941-314-2
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Matches
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Patent No. US20020142396A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                 Sequence 2, Application US/09941314 Patent No. US20020142396A1 GENERAL INFORMATION:
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 2
LENGTH: 137
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Best Local
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                                                            APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
FILE REFERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR APPLICATION STORY 109-01
NUMBER OF SEQ ID NOS: 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -09-941-314-3
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%; Score 138; DB 9; ilarity 100.0%; Pred. No. 8.5e-13; Conservative 0; Mismatches 0;
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GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Proceagulant Protein
FILE REFERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTMARE: FastSEQ for Windows Version 4.0
SEQ ID NO 17
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Patent No. US20020142396A1

GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein FILE REFERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/330,230
PRIOR APPLICATION SERVICE CONTROL OF THE CONTROL OF
                                                                                           Query Match
Best Local Similarity
Thehes 13; Conserve
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; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-941-314-12
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US-09-941-314-12
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Best Local Similarity 100.
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Patent No. US20020142396A1
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                                                                                                                                                                                                                                                                                                             LENGTH: 48
TYPE: PRT
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                                    NVEMOWTTCOKPS 24
NVEMOWITCOKPE 13
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                                                                                                                         Conservative
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100.0%; Pr
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100.0%; Pred. No. 1e-12;
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RESULT 14
US-09-864-761-40986
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; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-893-737-164
; Sequence 40986, Application US/09864761
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US-10-239-663-37
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Patent No. US20020110855A1
GENERAL INFORMATION:
APPLICANT: Sheppard, Paul O.
APPLICANT: Presnell, Scott R.
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                                                                                                                                                                    Query Match
Best Local S
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APPLICANT: Agarwal, Pankaj
APPLICANT: Murdoch, Paul
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                                                                                                                                                      Matches
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APPLICANT: Murdoch
APPLICANT: Rizvi,
APPLICANT: Smith,
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                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION NUMBER: PCT/US01/09226
PRIOR FILING DATE: 2001-03-27
PRIOR ADDITOR 2001-03-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CURRENT APPLICATION NUMBER: US/09/893,737
CURRENT FILING DATE: 2001-06-28
PRIOR APPLICATION NUMBER: US 60/215,446
PRIOR FILING DATE: 2000-06-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Kabnick, Karen
TITLE OF INVENTION: NOVEL COMPOUNDS
FILE REFERENCE: GPS-0018
CURRENT APPLICATION NUMBER: US/10/239,663
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SOFTWARE: FastSEQ for Windows Version 3.0
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TITLE OF INVENTION: MAMMALIAN SECRETED PROTEINS
                                                                                                                                                                                                                                                                                                                             PRIOR FILING DATE: 201
NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
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                                                                                                                                                                                                                                                                                                              SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                            LENGTH: 138
TYPE: PRT
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FILING DATE: 2000-03-24
APPLICATION NUMBER: 60/192,668
FILING DATE: 2000-03-27
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Similarity 47.6%;
10; Conservative
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                                                                                  KVTDSLEYYIEVKIARTICKK 94
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                                                                                                                                                      Score 56; DB Pred. No. 1.6; 6; Mismatches
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Pred. No. 0.61;
5; Mismatches
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1.6;
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ORGANISM: HOMO BADILL...

ORGANISM: HOMO BADILL...

FEATURE:

FEATURE:

OTHER INFORMATION: MAP TO AL121894.14

OTHER INFORMATION: EXPRESSED IN LUNG, SIGNAL = 1.5

OTHER INFORMATION: EXPRESSED IN HEART, SIGNAL = 1.5

OTHER INFORMATION: EXPRESSED IN BRAIN, SIGNAL = 1.5

OTHER INFORMATION: EXPRESSED IN PLACENTA, SIGNAL = 1.5

OTHER INFORMATION: EXPRESSED IN PLACENTA, SIGNAL = 1.5

OTHER INFORMATION: EXPRESSED IN FETAL LIVER, SIGNAL = 1.7

OTHER INFORMATION: EXPRESSED IN BONE MARROW, SIGNAL = 1.5

OTHER INFORMATION: EXPRESSED IN BONE MARROW, SIGNAL = 1.5

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PRIOR FILING DATE: 2000-02-04
PRIOR APPLICATION NUMBER: US 60/207,456
PRIOR FILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: US 09/632,366
PRIOR APPLICATION NUMBER: US 09/632,366
PRIOR PILING DATE: 2000-08-03
PRIOR PILING DATE: 2000-04
PRIOR APPLICATION NUMBER: US 60/236,359
PRIOR APPLICATION NUMBER: US 60/236,359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: Annomax Sequence Listing Engine vers. SEQ ID NO 40986
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APPLICANT: Hanzel, David K.
APPLICANT: Chen, Wensheng
TITLE OF INVENTION: HUMAN GENOME-DERIVED SINGLE EXON NUCLEIC ACID PROBES USEFUL
TITLE OF INVENTION: GENE EXPRESSION ANALYSIS BY MICROARRAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR FILING DATE: 2001-01-29
NUMBER OF SEQ ID NOS: 49117
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PRIOR APPLICATION NUMBER: PCT/US01/00666
PRIOR APPLICATION NUMBER: DCT/US01/00667
PRIOR APPLICATION NUMBER: PCT/US01/00667
PRIOR FILING DATE: 2001-01-30
PRIOR FILING DATE: 2001-01-30
PRIOR FILING DATE: 2001-01-30
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CURRENT FILING DATE: 2001-05-23
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR FILING DATE: 2000-06-30 PRIOR APPLICATION NUMBER: US 09/774,203
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                                                                                                            ocal Similarity
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cystatin precursor cystatin D precurs hypothetical prote histidinol-phospha methionine tRNA limethionine tRNA sy methionine tRNA sy serine/threonine-p protein F39E9.2 [i cystatin C precurs hypothetical prote pectate lyase (EC
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RQVTDHLEYHLNVEMQWTTCQKPE 24

Query Match 38.4%; Score 53; DB 2; Length 120; Best Local Similarity 41.7%; Pred. No. 0.81; Matches 10; Conservative 6; Mismatches 8; Indels 0; Gaps (RESULT 2 \$10587 Cystatin C - rat C;Species: Rattus sp. (rat) C;Date: 21-Nov-1993 #sequence_revision 03-Nov-1995 #text_change 16-Jul-1999 C;Date: 21-Nov-1993 #sequence_revision 03-Nov-1995 #text_change 16-Jul-1999 C;Accession: \$10587 R;Esnard, F:, Esnard, A:, Faucher, D.; Capony, J.P.; Derancourt, J.; Brillard, Biol. Chem. Hoppe-Seyler 371(Suppl.), 161-166, 1990 A;Title: Rat cystatin C: the complete amino acid sequence reveals a site for 1 A;Reference number: \$10587; MUID:90380276; PMID:2400577 A;Accession: \$10587 A;Reference number: S10587; MUID:90380276; PMID:2400577 A;Accession: \$10587 A;Cession: \$10587 A;Notecule type: protein A;Note: 43-Asn was also found A;Note: 43-Asn was also found A;Note: the sequence from Fig. 2 is inconsistent with that from Fig. 1 in have C;Supprfamily: cystatin, cystatin homology F;9-120/Domain: cystatin homology <cys></cys>	Query Match Best Local Similarity 40.9%; Pred. No. 0.029; Matches 9; Conservative 8; Mismatches 5; Indels 0; Gaps (Qy 2 QVTDHLEYHLNVEMQWTTCQXP 23 : : :::: : Db 74 QITDRMEYQIDVQISRSNCKXP 95	RESULT 1 A45361 A45361 Cystatin-related epididymal specific protein - mouse (fragment) C;Species: Mus musculus (house mouse) C;Date: 10-Jun-1993 #sequence_revision 18-Nov-1994 #text_change 05-Nov-1999 C;Accession: A45361 R;Cornwall, G.A.; Orgebin-Crist, M.C.; Hann, S.R. Mol. Endocrinol. 6, 1653-1664, 1992 A;Title: The CRES gene: a unique testis-regulated gene related to the cystatis A;Reference number: A45361; MJID:93078799; PMID:1280328 A;Accession: A43361; MJID:93078799; PMID:1280328 A;Accession: A43361 A;Status: preliminary; not compared with conceptual translation A;Residues: 1-139 <ccr> A;Note: sequence extracted from NCBI backbone (NCBIP:118813) C;Superfamily: cystatin, cystatin homology <cys></cys></ccr></ccr></ccr></ccr></ccr></ccr></ccr></ccr></ccr></ccr>	ALIGNMENTS	30 45 32.6 482 2 T15333 hypothetical prote 32.6 675 2 AF0185 methionine-tRNA li 32.6 913 2 G64110 hypothetical prote 33 44.5 32.2 2055 2 T31617 hypothetical prote 34 44 31.9 142 2 AC1279 hypothetical prote 35 44 31.9 42 2 AC1279 hypothetical prote 36 44 31.9 436 1 KGBOL1 udp-n-acetylmuramy 37 44 31.9 497 2 AA8956 hypothetical prote 24 31.9 497 2 AA8956 hypothetical prote 39 44 31.9 1075 2 C96682 hypothetical prote 31 43 31.9 1478 2 S78631 hypothetical prote 31 43 31.5 31.5 419 2 T25577 hypothetical prote 31 43 31.5 1131 2 F88570 hypothetical prote 31 43 31.2 325 2 D37476 fiber - human aden
Gaps 0;	ul-1999 Brillard, M.; Gautha site for N-glycosylat	Gaps 0;	ov-1999 e cystatin family is 0493		cal prote e-tRNA 1i cal prote

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A,Residues: 8, 'XX',11-20 <ES2>
C;Superfamily: cystatin; cystatin homology
C;Kywords: cysteine proteinase inhibitor
F;16-127/Domain: cystatin homology
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FEBS Lett. 300, 131-135, 1992
A;Title: Production of the cysteine proteinase inhibitor cystatin C by rat Sertoli cell
A;Reference number: S21109; MUID:92225121; PMID:1563513
A;Accession: S21109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEBS Lett. 236, 475-478, 1988
A;Title: Two rat homologues of human cystatin C.
A;Reference number: S01337; MUID:88313020; PMID:3044831
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C;Species: Rattus norvegicus (Norway rat)
C;Date: 01-Dec-1993 #sequence_revision 03-Aug-1995 #text_change 16-Jul-1999
C;Accession: S07085; S01337; S21109
R;Cole, T.; Dickson, P.W.; Esnard, F.; Averill, S.; Risbridger, G.P.; Gauth
Eur. J. Bjochem. 186, 35-42, 1989
                                                                                                                                                                                                                                                                           A;Molecule type: DNA
A;Residues: 1-1779 <WIL>
A;Cross-references: EMBL:AL021066; PIDN:CAA15925.1;
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A;Accession: S07085
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A; Accession: T25403
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F;80-90,104-124/Disulfide bonds: #status predicted
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A; Residues: 1-127 <COL>
                                         A; Experimental source:
                                                                      A;Cross-references: EMBL:Z81133;
                                                                                       A; Molecule type: DNA
A; Residues: 1-1779 <WI2>
                                                                                                                                                                                                         submitted to the EMBL Data Library,
                                                                                                                                                                                                                                 R;White,
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                                                                                                                                                                                                                                                                                                                                                                                                                   submitted to the EMBL Data Library,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       hypothetical protein T28B8.4 - Caenorhabditis elegans
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                                                                                                                                                                                                                                                                                                                                                                                                                                                              Species: Caenorhabditis elegans;
Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 15-Sep-2000;
Accession: T23130; T25403
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                                                                                                                                Status: preliminary; translated from GB/EMBL/DDBJ
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                                                                                                                                                                                                                                                                                                                                               Status: preliminary; translated from GB/EMBL/DDBJ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Status: preliminary
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236, 475-478, 1988
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41.7%;
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Pred. No. 0.86;
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                                                                      GSPDB:GN00019;
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                                                                                                                                                                                                                                                                               GSPDB:GN00019; CESP:T28B8.4
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A; Note: MSV208
C; Superfamily: C; Keywords: gly
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A;Introns: 161/2; 223/2; 309/3; 332/2;
Caenorhabditis elegans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
T28369
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                                                                                                                                                                                                                                                                                                                 R;Afonso, C.L.; Tulman, E.R.; Lu, Z.; Oma, E.; Kutish, G.F.; J. Virol. 73, 533-552, 1999
A;Title: The genome of Melanoplus sanguinipes entomopoxvirus A;Reference number: 220484; MUID:99102612; PMID:9847359
                                                                                                                                                                                                                                                                                                                                                                                                           probable uracil-DNA glycosylase (EC 3.2.2.-) UNG MSV208 [similarity] - Melanoplus
C;Species: Melanoplus sanguinipes entomopoxvirus
C;Date: 21-Jan-2000 #sequence_revision 21-Jan-2000 #text_change 21-Jul-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: protein
A; Residues: 1-112 <HIR>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cystatin - bovine
                                                                                                                                                                                                                                               A;Residues: 1-232 <AFO>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;Hirado, M.; Tsunasawa, S.
EBS Lett. 186, 41-45, 1985
                                                                                                                                                                                                                                                              ;Molecule type: DNA
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Species: Bos primigenius taurus (cattle);
Date: 28-Feb-1986 #sequence_revision 28-Feb-1986 #text_change 06-Dec-1996;
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Best Local
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                                                                                        Query Match
Best Local
                                                                                                                                               Superfamily: uracil-DNA glycosylase Keywords: glycosidase; hydrolase
                                                                                                                                                                                                                         Cross-references: EMBL:AF063866; NID:g4049647; PIDN:AAC97753.1; PID:g4049793
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Pred. No.
230
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Pred. No. 4
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Pred. No. 15;
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4.7
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tical protein T28B8.3
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A;Gene: fucI
C;Superfamil
C;Keywords:
                                                                                      cystatin - puff adder
C;Species: Bitis arietans (puff adder)
C;Date: 15-Dec-1988 #sequence_revision
C;Accession: A28793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C;Species: Streptococcus pneumoniae
C;Date: 22-Oct-2001 #sequence_revision 22-Oct-2001 #text_change 02-Nov-2001
C;Accession: A99717
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A;Authors: Loftus, B.J.; Yang, F.; Smith, H.O.; Venter, J.C.; Dougherty, B.A.; Morrison, A;Title: Complete Genome Sequence of a virulent isolate of Streptococcus pneumoniae.
A;Reference number: A95000; MUID:21357209; PMID:11463916
A;Accession: C95252
R;Ritonja, A.; Evans, H.J.; Machleidt, W.; Barrett, A.J. Biochem. J. 246, 799-802, 1987
A;Title: Amino acid sequence of a cystatin from venom of A;Reference number: A28793; MUID:88076861; PMID:3500714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Authors: Yang, Y.; Young-Bellido, M.; Zhao, G.; Zook, C. A; Title: Genome of the Bacterium Streptococcus pneumoniae A; Reference number: A97872; MUID:21429245; PMID:11544234 A; Accession: A99717
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C;Species: Streptococcus pneumoniae
C;Date: 03-Aug-2001 #sequence_revision 03-Aug-2001 #text_change 24-Aug-2001
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A; Residues: 1-588 < KUR>
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A;Experimental source: strain TIGR4
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R.; LeBlanc, D.J.; Lee, L.N.; Lefkowitz, B.J.; Lu, J.; Matsushima, P.; McAhren,
P.; Sun, P.M.; Winkler, M.B.
Bacteriol. 183, 5709-5717, 2001
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Pred. No. 13;
3; Mismatches
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Pred. No.
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3; Mismatches
                                                                                                            15-Dec-1988 #text_change
from venom of the African puff adder PMID:3500714
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Eur. J. Biochem.
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R;Colella, R.; Bird, J.W.C. Gene 130, 175-181, 1993
A;Title: Isolation and characterization of the chicken cystatin-encoding A;Reference number: JN0789; MUID:93366172; PMID:8359684
A;Accession: JN0789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Molecule type: protein
A;Residues: 24-139 <SCH>
A;Residues: 24-139 <SCH>
R;Turk, V.; Brzin, J.; Longer, M.; Ritonja, A.; Eropkin, M.; Borchart, U.; Machleidt, W.
R;Turk, V.; Brzin, J.; Longer, M.; Ritonja, A.; Eropkin, M.; Borchart, U.; Machleidt, W.
Hoppe-Seyler's Z. Physiol. Chem. 364, 1487-1496, 1983
A;Title: Protein inhibitors of cysteine proteinases. III. Amino-acid sequence of cystatin
A;Reference number: S01461; MUID:84110059; PMID:6662498
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C;Date: 03-Aug-1984 #sequence revision 12-Apr-1996 #text
C;Accession: A34456; A01274; S01461; S48159; S04008; JN0
R;Colella, R.; Sakaguchi, Y.; Nagase, H.; Bird, J.W.C.
J Biol. Chem. 264, 17164-17169, 1989
A;Title: Chicken egg white cystatin. Molecular cloning, A;Reference number: A34456; MUID:90008873; PMID:2793849
A;Accession: A34456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eur. J. Biochem. 224, 407-415, 1994.
A;Title: Production, inhibitory activity, folding and c
A;Reference number: S48159; MUID:95010016; PMID:7925354
A;Accession: S48159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Molecule type: protein
A;Residues: 24-139 <TUR>
R;Anastasi, A.; Brown, M.A.; Kembhavi, A.A.; Nicklin, M.J.H.; Sayers, C.A.; Sunter,
Biochem. J. 211, 129-138, 1983
                                                                                                                                                                                                                              FBBS Lett. 248, 162-168, 1989
A;Title: The cysteine proteinase inhibitor chicken cystatin
A;Reference number: S04008; MUID:89252033; PMID:2721673
A;Accession: S04008
                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: protein
A; Residues: 24-139 < AUE>
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A;Contents: annotation; disulfide bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     \mathtt{A}_iTitle: The disulphide bridges of human cystatin C (gamma-trace) and chicken cystatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R; Grubb, A.; Lofberg, H.; Barrett, A.J. FEBS Lett. 170, 370-374, 1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Biochem. J. 211, 129-138, 1983
A;Title: Cystatin, a protein inhibitor of cysteine proteinases.
A;Reference number: A37514; MUID:83256421; PMID:6409085
A;Contents: annotation; characterization of protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cystatin precursor - chicken
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;Schwabe, C.; Anastasi, A.; Crow, H.; McDonald, J.K.; Barrett, A.J. iochem. J. 217, 813-817, 1984
;Title: Cystatin. Amino acid sequence and possible secondary structure;Reference number: A01274; MUID:84178305; PMID:6712597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cross-references: GB:J05077; NID:g211714; PIDN:AAA48744.1; PID:g211715; Schwabe, C.; Anastasi, A.; Crow, H.; McDonald, J.K.; Barrett, A.J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Alternate names: cystatin 1; cysteine proteinase inhibitor; egg-white cystatin;
                                                                                                                                                                                                                                                                                                                            Laber, B.; Krieglstein, K.; Henschen, A.; BS Lett. 248, 162-168, 1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QVVSGVKYYLMMELLKTTCKK
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Pred. No. 4
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A;Molecule type: DNA
A;Residues: 1-24,'T',26-146 <SAI>
A;Residues: 1-24,'T',26-146 <SAI>
A;Cross-references: GB:M27889; GB:M27890; GB:M27891; NID:g181385;
A;Ghiso, J.; Cowan, N.; Frangione, B.
Biol. Chem. Hoppe-Seyler 369; 205-208, 1988
A;Title: Isolation of a sequence encoding human cystatin C. Consex A;Reference number: S02751; MUID:89076507; PMID:3264504
A;Accession: S02751
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A;Introns: 76/3; 114/3
A;Introns: 76/3; 114/3
C;Superfamily: Cystatin; cystatin homology
C;Superfamily: Cysteine proteinase inhibitor; egg white; phosphoprotein
E;1-23/Domain: signal sequence #status predicted <SIG>
F;24-139/Domain: signal sequence #status experimental <CYLF>
F;30-139/Domain: cystatin, long form #status experimental <CYLF>
F;30-139/Domain: cystatin, short form #status experimental <CYSF>
F;32-139/Product: cystatin, short form #status experimental <CYSF>
F;76-80/Region: inhibitory #status predicted
F;94-104,118-138/Disulfide bonds: #status experimental
F;103/Binding site: phosphate (Ser) (covalent) (partial) #status experimental
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A;Rosa-references: GB:M95725
A;Crosa-references: GB:M95725
A;Note: authbors failed to translate the codon for residue 115-Tyr
C;Comment: This protein binds tightly to and inhibits a variety of cysteine proteinases
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Cross-references: EMBL:X05607; NID:g30371; PIDN:CAA29096.1; PID:g755738
R;Levy, E.; Lopez-Otin, C.; Ghiso, J.; Geltner, D.; Frangione, B.
7. Exp. Med. 169, 1771-1778, 1989
A;Title: Stroke in Icelandic patients with hereditary amyloid angiopathy is related A;Reference number: JL0095; MUID:89235594; PMID:2541223
A;Accession: JL0095; MUID:89235594; PMID:2541223
                                                                                                                                                                                                                                                                                                                           R;Saitoh, E.; Sabatini, L.M.; Eddy, R.L.; Shows, T.B.; Azen, Biochem. Biophys. Res. Commun. 162, 1324-1331, 1989
A;Title: The human cystatin C gene (CST3) is a member of the A;Reference number: A33400; MUID:89350949; PMID:2764935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C;Date: 06-Jul-1982 #sequence revision 31-Mar-1991 #text change 08-Dec-2000 C;Accession: S10216; S00004; JL0095; A33400; S02751; A01270; A25434; S12288; R;Abrahamson, M.; Olafeson, I.; Palsdottir, A.; Ulvsbaeck, M.; Lundwall, A.;
A; Molecule type:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Cross-references: GB:X61681; NID:g30367; PIDN:CAA43856.2; PID:g4490944 A;Note: the cystatin C gene isolated from the brain of an Icelandic pati
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Cross-references: EMBL:X52255; NID:g30257; PIDN:CAA36497.1; PID:g296643 R;Abrahamson, M.; Grubb, A.; Olafsson, I.; Lundwall, A. FEBS Lett. 216, 229-233, 1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Biochem. J. 268, 287-294, 1990
A;Title: Structure and expression of the human cystatin C gene
A;Reference number: S10216; MUID:90303202; PMID:2363674
                                                                                                                                                                                                                                                                                                   A; Accession: A33400
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A; Residues: 1-146 < AB2 >
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A; Residues: 1-146 < A
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Pred. No. 5.
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Jensson, O.
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A;Cross-references: GDB:119817; OMIM:105150
A;Map position: 20p11.2-20p11.2
A;Introns: 81/3; 119/3
C;Superfamily: cystatin; cystatin homology
C;Keywords: amyloid; cysteine proteinase in
                                                                                                                                                                                                                                                                                                                                                                                                                                              R;Berti, P.J.; Storer, A.C.
Blochem. J. 302, 411-416, 1994
A;Title: Local pH-dependent conformational changes leading A;Reference number: $55305; MUID:94379969; PMID:8092991
A;Accession: $55305
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A; Molecule type: protein
A; Residues: 27-49; XX', 52-64 < COLA>
A; Residues: 27-49; XX', 52-64 < COLA>
A; Rote: this protein, purified from cerebrospinal fluid of patients with the autosomal edefective gene is not present in CSF but is found instead in amyloid deposits
R; Popovic, T.; Brzin, J.; Ritonja, A.; Turk, V.
Biol. Chem. Hoppe-Seyler 371, 575-580, 1900
A; Title: Different forms of human cystatin C.
A; Reference number: $10607; MUID:91025625; PMID:2222856
A; A; Accession: $10607; MUID:91025625; PMID:2222856
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A;Residues: 27-76 <BRZ>
R;Olafsson, I.; Gudmundsson, G.; Abrahamson, M.; Jensson, O
Scand. J. Clin Lab. Invest. 50, 85-93, 1990
A;Title: The amino terminal portion of cerebrospinal fluid A;Reference number: A60552; MUID:90193615; PMID:2315647
A;Accession: A60552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R;Grubb, A.; Lofberg, H.; Barrett, A.J. FEBS Lett. 170, 370-374, 1984 A;Title: The disulphide bridges of human
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A; Residues: 27-73 <TUR's
R; BERZIN, U. 7; Popovic, T.; Turk, V.
Biochem. Biophys. Res. Commun. 118, 103-109, 1984
B; Title: Human cystatin, a new protein inhibitor of cysteine proteinases.
A; Reference number: A32732; MUID:84128015; PMID:6365094
A; Accession: A32732
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A;Note: the authors translated the codon ACC R;Grubb, A.; Lofberg, H.
                                                                                                                                                                                                                              C;Comment: This protein is found in the post-gamma-globulin fraction of cerebrospinal f patients with certain autoimmune diseases.
C;Comment: This protein is an inhibitor of cysteine proteinases and may serve an impor C;Comment: A mutant cystatin C, with 94-Gln, is deposited in hereditary cerebral hermo
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A;Molecule type: protein
A;Residues: 27-49;106-146 <BER>
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A; Residues: 37-93, Q',95-146 <GHI>
R; Turk, V.; Brzin, J.; Longer, M.; Ritonja, A.; Eropkin, I
R; Turk, V.; Brzin, J.; Longer, M.; Ritonja, A.; Eropkin, I
Hoppe-Seyler's Z. Physiol. Chem. 364, 1487-1496, 1983
A; Title: Protein inhibitors of cysteine proteinases. III.
A; Raference number: S01461; MUID:84110059; PMID:6662498
A; Accession: S12288
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A;Residues: 27-131, S.,133-146 <GRU>
A;Residues: 27-131, S.,133-146 <GRU>
R;Chiso, J.; Jensson, O.; Frangione, B.
Proc. Natl. Acad. Sci. U.S.A. 83, 2974-2978, 1986
Proc. Natl. Acad. Sci. U.S.A. 83, 2974-2978, 1986
A;Title: Amyloid fibrils in hereditary cerebral hemorrhage with amyloidosis of Iceland A;Reference number: A25434; MUID:86206076; PMID:3517880
A;Accession: A25434
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A;Contents: annotation; disulfide bonds
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Natl. Acad. Sci. U.S.A. 79, 3024-3027, 1982
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inhibitor; extracellular protein; hydroxyproline

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hypothetical protein C47D12.8 - Caenorhabditis elegans (fragment) C;Specites: Caenorhabditis elegans (C;Decites: Caenorhabditis elegans C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 15-Oct-1999 C;Accession: T19998 R;Gajadsty, S.
                                                                                                                                                                                                                                                                                                                      submitted to the EMBL Data Library, March 1996
A;Reference number: Z19209
A;Accession: T19998
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A;Molecule type: DNA
A;Residues: 1-519 <STO>
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A;Reference number: A75000; MUID:99069613; EMID:9951916
A;Note: see websites genome wusth.edu/gsc/C_elegans/ and www.sanger.ac.uk/projects/C_elegans/A;Note: published errata appeared in Science 283, 35, 1999; Science 283, 2103, 1999; and
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F;27-146/Product: cystatin C #status experimental <WAT>
F;35-146/Domain: cystatin homology <CVS>
F;81-85/Region: inhibitory #status predicted
F;29/Modified site: hydroxyproline (Pro) (partial) #status experimental
F;99-109,123-143/Disulfide bonds: #status experimental
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Pred. No. 27;
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C;Superfamily: tumarace uyucucuc
C;Keywords: amidine-lyase; carbon-nitrogen lyase
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R;anonymous, Genoscope
submitted to the EMBL Data Library, July 1999
%. Pagaription: Pyrococcus abyssi genome sequence: insights into archaeal chromosome
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A;Cross-references: GB:AP000398; GSPDB:GN00144
A;Experimental source: strain APS
                                                                                                                                                                                                                                                                                                                          A;Title: Genome sequence of the endocellular bacterial symbiont of aphids Buchnera A;Reference number: A84930; MUID:20445173; PMID:10993077 A;Accession: E84960
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Nature 407, 81-86, 2000
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A;Residues: 1-1308 <KAW>
A;Cross-references: GB:AJ248283; GB:AL096836; NID:g5457433; PIDN:CAB49033.1; PID:e151492
A;Experimental source: strain Orsay
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C;Species: Pyrococcus abyssi
C;Date: 20-Aug-1999 #sequence_revision 20-Aug-1999 #text_change 20-Aug-1999
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              "Functional annotation of a full-length mouse cDNA Nature 409:685-690(2001).
-!- SUBCELLULAR LOCATION: Secreted (Potential).
-!- SIMILARITY: Belongs to the cystatin family.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 138; UB 1;
Pred. No. 6.5e-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CYSTATIN 11.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C585C8C39A585C3B CRC64;
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RESULT 3
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Best Local S
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DISULFID
CARBOHYD
                                                                                                                                                                                                                                           Cornwall G.A., Hsia N., Sutton H.G.; "Structure, alternative splicing and chror cystatin.related epididymal spermatogenic Biochem. J. 340:85-93(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                   30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
10-CCT-2003 (Rel. 42, Last annotation update)
Cystatin-related epididymal spermatogenic protein precursor (Cystatin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; AK020300; BAB32061
HSSP; P01034; 1G96.
MGD; MGI:1925490; Cstll.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                      between the Swiss Institute of Bioinformat
the European Bioinformatics Institute. The
use by non-profit institutions as long
modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                 STRAIN-Sprague-Dawley; TISSUE-Epididymis; MEDLINE-99247899; PubMed-10229662;
                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            088969;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                    EMBL; AF090692;
HSSP; P01034; 10
                                                                            entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pfam; PF00031; cystatin;
SMART; SM00043; CY; 1
PROSITE; PS00287; CYSTAT
                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                                        -!- SIMILARITY:
                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                               Rattus norvegicus (Rat).
                                                                                                                                                                                                                                                                                                                                                                                                              CST8 OR CRES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CST8
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nterPro; IPR000010;
                                                                                                                                                                                                                              FUNCTION: Performs a specialized role during sperm
                                                                                                                                                                                                      SUBCELLULAR
                                                                                                                                                                                                                   maturation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protease inhibitor;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 RQVTDHLEYHLNVEMQWTTCQKPE 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               l Similarity
17; Conserv
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                                       1G96.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                   AAC36317.1; -.
                                                                                                                                                                                      Belongs to the cystatin family.
                                                                                                                                                                                                     LOCATION: Secreted (By similarity).
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139
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102
135
134
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70.8%;
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Pred.
                                                                                                                    of Bioinformatics and the EMBL outsu
Institute. There are no restrictions
tions as long as its content is in
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CYSTATIN 11.

SECONDARY AREA OF CONTACT (POTENTIAL)
BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                    Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                       .G.; and chromosomal localization
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No.
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                                                                                          (See http://www.isb-sib.ch/announce/
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                                                                                                                                                                                                                                                           gene
                                                                                                        Usage
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                                                                                                                                                EMBL outstation
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F
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                                                                                                          commercial
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InterPro; IPR000010; Cys Pfam; PF00031; cystatin;

Cystatin

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REPORTED CONTROL OF THE PROPERTY OF THE PROPER
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Best Local S
Matches 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 U1-OCT-1993 (Rel. 27, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Cystatin-related epididymal spermatogenic protein precursor (Cystatin-related epididymal specific protein) (Cystatin 8).
CST8 OR CRES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DISULFID
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CARBOHYD
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SIGNAL
CHAIN
                          EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "The CRES gene: a unique testis-regulated gene related to the family is highly restricted in its expression to the proximal of the mouse epididymis.";
Mol. Endocrinol. 6:1653-1664(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Cornwall G.A., Hsia N., Sutton H.G.; "Structure, alternative splicing and chromosomal localization cystatin-related epididymal spermatogenic gene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MOUSE MOUSE
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                                                                                                                        entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TISSUE=Epididymis;
MEDLINE=93078799; PubMed=1280328;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Biochem. J. 340:85-93(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=99247899; PubMed=10229662;
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                                                                                                                                                                             s SWISS-PROT entry is copyright. It is produced through a cween the Swiss Institute of Bioinformatics and the EMBL Buropean Bioinformatics Institute. There are no restrict by non-profit institutions as long as its content is if its and this statement is not removed. Usage by and fo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUBCELLULAR LOCATION: Secreted.
TISSUE SPECIFICITY: Proximal caput region of the epididymis. Lo
                                                                                                                                                                                                                                                                                                                                                                            of CRES gene expression.
SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                        elongating spermatids, whereas within the epididymis it exclusively synthesized by the proximal caput spithelium INDUCTION. Testicular factors or hormones other than and present in the testicular fluid may be involved in the respective to the control of the con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FUNCTION: Performs a specialized role
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           maturation.
                          AF091503;
AF090691;
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L 1 19 POTENTIAL.
CYSTATIN-RELATED PROTEIN.
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                       AAC61754.1; -.
AAC36316.1; -.
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105
139
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Rodentia;
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Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SECONDARY AREA OF
BY SIMILARITY.
BY SIMILARITY.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FB873FAA6B6CAB34
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No. 0.00092;
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                                                                                                                                                  moved. Usage by and for (See http://www.isb-sib.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
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region
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A Jones M., Stavrides G., Almeida J.P., Babbage A.K., Bagguley C.L., RA Bailey J., Barlow K.F., Bates K.N., Beard L.M., Beare D.M., RA Beasley O.P., Bird C.P., Blakey S.E., Bridgeman A.M., Brown A.J., RA Beasley O.P., Bird C.P., Blakey S.E., Bridgeman A.M., Brown A.J., RA Chapman J.C., Clamp M., Clark G., Clark L.N., Clark S.Y., Clee C.M., RA Chapman J.C., Clamp M., Clark G., Clark L.N., Clark S.Y., Clee C.M., RA Clegg S., Cobley V.E., Collier R.E., Connor R.E., Corby N.R., RA Coulson A., Coville G.J., Deadman R., Dhami P.D., Dunn M., RA Collison A., G., Frankland J.A., Fraser A., French L., Garner P., RA Ellington A.G., Frankland J.A., Fraser A., French L., Garner P., RA Huckle E., Hunt A.R., Hunt S.E., Jekosch K., Johnson C.M., Johnson D., RA Huckle E., Hunt A.R., Hunt S.E., Jekosch K., Johnson C.M., Johnson D., RA Kay M.P., Kimberley A.M., King A., Knights A., Laird G.K., Lawlor S., Lehvaeslaiho M.H., Leversha M.A., Lloyd C., Lloyd D.M., Lovell J.D., RA Marsh V.L., Martin S.L., McConnachie L.J., McLay K., McMurray A.A., RA Milne S.A., Mistry D., Moore M.J.F., Mullikin J.C., Nickerson T., RA Phillimore B.J.C.T., Prathalingam S.R., Plumb R.W., Ramsay H., RA Rice C.M., Ross M.T., Scott C.E., Sehra H.K., Shownkeen R., Sims S., Shan R.M., Sycamore N., Taylor R., Tee L., Thomas D.
                     RESULT
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Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Cystatin-related epididymal spermatogenic pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CST8_HUMAN
060676;
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SMART; SM00043; CY; 1.
Thiol protease inhibitor; Signal
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MGD; MGI:107161; Cst8.
InterPro; IPR000010; Cystatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Transient appearance of CRES protein caput epididymal sperm maturation."; Mol. Reprod. Dev. 41:37-46(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=95344753; PubMed=7619504;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens (Human)
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9; Conserv
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Primates;
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3; Mismatches
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N-LINKED (GLCNAC. . .) (POTENTIAL).
PLMLSLILFIIP -> GTRDEQVESQK (IN RE:
50B446E9BF66673E CRC64;
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BY SIMILARITY.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
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Best Local
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SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

MEDLINE-21638749; PubMed=11780052;

MEDLINE-21638749; PubMed=11780052;

Deloukas P., Matthews L.H., Ashurst J., Burton J., Gilbert J., Deloukas P., Matthews L.H., Ashurst J., Babbage A.K., Bagguley Jones M., Stavrides G., Almeida J.P., Babbage A.K., Bagguley Bailey J., Barlow K.F., Bates K.N., Beard L.M., Beare D.M., Parlow O.P., Bird C.P., Blakey S.E., Bridgeman A.M., Brown J.
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                                                                                                     Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=9606;
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28-FEB-2003
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EMBL;
HSSP;
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                                                                                                                                                                                                                                    HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF00031; cystatin; 1. SMART; SM00043; CY; 1.
                                                                                                                                                                 Cystatin-like
                                                                                                                                                                                                 28-FEB-2003
                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Genew; HGNC:2480; CST8.
GO; GO:0004869; F:cysteine
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             modified
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                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                        CSTL_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                 VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR000010; Cystatin.
                                                                                                                                                                                                                                               σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    s SWISS-PROT entry is copyright. It is produced through a cween the Swiss Institute of Bioinformatics and the EMBL European Bioinformatics Institute. There are no restrict by non-profit institutions as long as its content is ified and this statement is not removed. Usage by and foities requires a license agreement (See http://www.isb-sib.send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               exclusively synthesized by the proximal cap SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SUBCELLULAR LOCATION: Secreted.
TISSUE SPECIFICITY: Proximal caput
expression in the testis. Within the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SUBCELLULAR LOCATION: TISSUE SPECIFICITY: P
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                                                                                                                                                                                                                                                                                 QVTNLLEYLIDVEIARSDCRKP
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| (Rel. 41, |
| (Rel. 41, |
| (Rel. 41, |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Tromans A.C., Vaudin M., Wall M., Wallis
S.L., Whittaker P., Willey D.L., Williams
, Wray P.W., Hubbard T., Durbin R.M., Bent
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                                                                                                                                                                                                                        STANDARD;
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                                                                                                                              Chordata;
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Last
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Pred. No. 0.17;
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CYSTATIN-RELATED EPIDIDYMAL SPERMATOGENIC
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                                                                                                                  Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   inhibitor activity;
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/AR_014527.
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Bentley
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as L., Williams ?
entley D.R., Bec
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Beck
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01-APR-1990
28-FEB-2003
Cystatin C p
        Cystatin CST3.
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                                                      CYTC
                                                                                                                                                                                                                                             CHAIN
                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                      SITE
                                                                                                                                                                                                                                                                                                                                                                                             Nature 414:865-871(2001)
                                                                                                                                                                                                                                                     SIGNAL
                                                                                                                                                                                                                                                                  InterPro; IPR000010; Cystatin.
PROSITE; PS00287; CYSTATIN; FALSE_NEG
                                                                                                                                                                                                                                                                                    Genew;
                                                                                                                                                                                                                                                                                                                                                                                                      "The DNA
Rattus norvegicus
                                                                                                                                                                                                                                                             Thiol
                                                                                                                                                                                                                                                                                                                                                                              -!- SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                      SUBCELLULAR LOCATION: Secreted (Potential).
                                                      RAT
                                                                                                                                                                                                                                                                                           AL096677; CAC
P01038; 1A90.
                                                                                                                                                                                                                                                            procease
                                                                                             92
                                                                                                                                                                                                                                                                                   HGNC:15958; CSTL1.
                                                                                                                           9;
                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                   sequence and comparative analysis of human
                                                                                             ROLTTGVEYIVTVKIGWTKCKR
                                                                                                          ROVIDHLEYHLNVEMOWITCOK 22
             0 (Rel. 14, Created)
0 (Rel. 14, Last sequence up
3 (Rel. 41, Last annotation
precursor (Fragment).
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Matches 10
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"Rat cystatin C: the complete amino acid sequence N-glycosylation.";
Biol "N-o";
                                                                     DISULFID
DISULFID
CONFLICT
SEQUENCE
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ACT SITE
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                                                                                                                                                                                                                                                                                                                      the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for con
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Cole T., Dickson P.W., Esnard F., Averill F.,
Gauthier F., Schreiber G.;
                                                                                                                                                                                                                                      PIR; S07085; S07085.
PIR; S10587; S10587.
HSSP; P01034; 1G96.
                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=92225121; PubMed=1563513;
Esnard A.; Esnard F., Guillou F., Gautl
"Production of the cysteine proteinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE-88313020; PubMed=3044031,
Esnard A., Esnard F., Faucher D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "The cDNA structure and expression analysis of the genes for the cysteine proteinase inhibitor cystatin C and for beta 2-microglol
                                                                                                                                                                                                    Pfam; PF00031; cystatin; 1. SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                          EMBL; X16957; CAA34831.1;
                                                                                                                                                                                                                                                                                                 or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                              entities
                                                                                                                                                                                                                                                                                                                                                              between
                                                                                                                                                                                                                                                                                                                                                                                              -!- SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sertoli cells."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eur. J. Biochem. 186:35-42(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                              Thiol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE=Sertoli
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      in rat brain.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN=Buffalo;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=10116;
                                                                                                                                                                                                                             nterPro
                                                                                                                                                                                                                                                                                                                                                                                                                    FUNCTION: As an inhibitor of cysteine proteinases, this thought to serve an important physiological role as a largulator of this enzyme activity. Known to inhibits car
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rat homologues of human cystatin Lett. 236:475-478(1988).
                                                                                                                                                                                                                                                                                                                                                           SWISS-PROT entry is copyright. It is produced through a collaboration -
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                                     Similarity
RQVTDHLEYHLNVEMQWTTCQKPE
                                                                                                                                                                                                                                                                                                              requires a license agreement
                                                                                                                                                                                            PS00287;
                                                                                                                                                                                                                            IPR000010; Cystatin.
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80
104
125
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                         Conservative
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                                                                                                                                                                              inhibitor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cells;
                                                                                                                                                                                          CYSTATIN; 1.
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                                                                       14039
                                  38.4%;
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                                                                               CYSTATIN C.
REACTIVE SITE.
SECONDARY AREA C
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BY SIMILARITY.
BY SIMILARITY.
A -> E (IN REF.
                       Score 53; DB
Pred. No. 0.43
6; Mismatches
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                                                                      -> E (IN REF. 2)
78F70158B7925853
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inase inhibitor cystatin C by
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                                                                                                                                                                                                                                                                                                              (See http://www.isb-sib.ch/announce/
                                   DB 1;
0.43;
                                                                                                                      QF.
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                        80
                                               Length 127;
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                                                                      CRC64;
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15-JUL-1999
28-FEB-2003
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use by non-profit institutions as long as its content
modified and this statement is not removed. Usage by ar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Complete amino acid proteinase inhibitor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A., SEQUENCE OF 6 TISSUE=Cerebrospinal fluid, and C MEDLINE=98094199; PubMed=9434110;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mammalia; Eutheria; Ce
Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P01035;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BOVIN
                                                                                                                                                                                                                                                                                                                      EMBL; Y10811; CAA71771.1; -. HSSP; P01034; 1G96.
                                                                                                                                                                                                                                                                                                                                                        or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
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Hirado M., Tsunasawa S., Sakiyama F., Niinobe M.,
"Complete amino acid sequence of bovine colostrum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE OF 37-148.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Biochim. Biophys. Acta 1343:203-210(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=9913;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bos taurus (Bovine).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CYTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Olsson S.-L., Ek B., Wilm M., Broberg S., Rask L., Bj
"Molecular cloning and N-terminal analysis of bovine
identification of a full-length N-terminal region.";
                                                                                                                                                                                                                                       CHAIN
                                                                                                                                                                                                                                                     SIGNAL
                                                                                                                                                                                                                                                                         PROSITE; PS00287;
                                                                                                                                                                                                                                                                                     Pfam; PF00031; cystatin; SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEBS Lett.
                                                                                                                                                                                                                                                              Chiol
                                                                                                                                                                                                                                                                                                            InterPro; IPR000010;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MASS
                                                                                                                                                                                                                                                                                                                                                                                                                                                             FUNCTION: This is a thiol promass spectrometry: MW=13420;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BOVIN
                                                                                                                                                                                                                                                             protease inhibitor;
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                                                                          83
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                                                                                                                                  Similarity
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                                                                          KOVVSGMNYFLDVELGRTTCTKSQ 106
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                                                                                                                                                                                                                                                                                                                                                                                                                                                             Inhibitor. 186:41-45(1985).
This is a thiol proteinase inhibitor. wermADD=MALDI.
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9 (Rel. 38, Last sequence update)
3 (Rel. 41, Last annotation updat
precursor (Colostrum thiol prote
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Metazoa;
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148 AA;
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                  STANDARD;
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148
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112
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                                                                                                                                37.7%;
                                                                                                                                                                    16265
                                                                                                                                                                                                                                                                                                           Cystatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sequence
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7.71;
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                                                                                                                                             Length 148;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     inhibitor)
                                                                                                                        Indels
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low-Mr cysteine
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                              STRAIN=BALB/c; TISSUE=Brain; MEDLINE=91054522; PubMed=224 Solem M., Rawson C., Lindbur
                                                                                                                                                                                                             Eukaryota;
Mammalia;
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Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
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"Cystatin C. Icelandic-like mutation
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Wei L.H., Walker L.C.
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Mammalia; Eutheria; Primates; Platyrrhini; Cebidae; Cebinae; Saimiri
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SIMILARITY: Belongs to the cystatin family.
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PubMed=2241983;
C., Lindburg K., Barnes D.
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Mamm. Genome 12.657-667
                                             PROSITE;
Thiol pr
                                                                                                                                      EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Structural organization, expression and mouse cystatin-C-encoding gene (Cst3).", Gene 152:221-226(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=95137392; PubMed=7835704;
Huh C., Nagle J.W., Kozak C.A., Abrahamson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mouse embryo (SFME) cells.";
Biochem. Biophys. Res. Commun. 172:945-951(1990).
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EMBL; BC002072; AAH0
PIR; A36163; A36163.
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Ehringer M.A., Thompson J., Conroy
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E.A., Grouse L.H., Derge J.G.,
L., Wagner L., Shenmen C.M., Schuler G.
Buetow K.H., Schaefer C.F., Bhat N.K.
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15-DEC-1998 (Rel. 37, L
10-OCT-2003 (Rel. 42, L
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Deloukas P., Matthews L.H., Ashurst J., Burton J., Gilbert J.G.R., Jones M., Stavrides G., Almeida J.P., Babbage A.K., Bagguley C.L., Babiley J., Barlow K.F., Bates K.N., Beard L.M., Beare D.M., Barley J.P., Bird C.P., Blates K.N., Bridgeman A.M., Brown A.J., Buck D., Burrill M.D., Butler A.P., Carder C., Carter N.P., Chapman J.C., Clamp M., Clark G., Clark L.N., Clark S.Y., Clee C.P., Clagg S., Cobley V.B., Collier R.B., Connor R.B., Corby N.R., Coulson A., Coville G.J., Deadman R., Dhami P.D., Dunn M., Clark Grafham D.V., Griffiths C., Griffiths M.N.D., Gwilliam R., Hall R. Hammond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P. Huckle E., Hunt A.R., Hunt S.E., Jekosch K., Johnson C.M., Johnson
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Grubb A., Su J., Gentz R., Abrahamson M.
"Cystatin F is a glycosylated human low
proteinase inhibitor.";
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Eukaryota, Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Butheria; Primates; Catarrhini; Hominidae;
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J. Biol. Chem. 273:16400-16408(1998)
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                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=21638749; PubMed=11780052;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Morita
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Leukocystatin, a new class II cystatin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=98298157;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hannum C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local
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homologue of
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10; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Chem.
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cine CMAP.";
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Pred. No. 1.9;
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-> F (IN REF. 1)
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                      Howden P.J.,
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RA Strausberg R.D., Collins F.S., Wagner L., Schamen C.M., Schuler G.D.,
RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Haish F.,
RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA Brownstein M.J., Usdin T.B., Toshiyuki S., Cararinci P., Prange C.,
RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
RA Bukterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
RA Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
RA Schnerch A., Schein J.B., Jones S.J.M., Marra M.A.;
"Generation and initial analysis of more than 15,000 full-length
RT human and mouse cDNA sequences.";
"Generation other cystatins. May play a role in immune regulation
CC --- FUNCTION: Inhibits papain and cathepsin L but with affinities
CC --- SUBCELULAR LOCATION: Secreted (Probable).

C--- TISSUE SPECIFICITY: Primarily expressed in peripheral blood cells
and spleen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Marsh V.L., Martin S.L., McConnachie L.J., McLay K., McMurray A.A., Miller S.A., Mistry D., Moore M.J.F., Mullikin J.C., Nickerson T., Oliver K., Parker A., Patel R., Pearce T.A.V., Peck A.I., Phillimore B.J.C.T., Prathalingam S.R., Plumb R.W., Ramsay H., Rice C.M., Ross M.T., Scott C.E., Sehra H.K., Shownkeen R., Sims S., Skuce C.D., Smith M.L., Soderlund C., Steward C.A., Sulston J.E., Swann R.M., Sycamore N., Taylor R., Tee tward C.A., Sulston J.E., Swann R.M., Sycamore N., Taylor R., Tee tward C.A., Steward S.A., Tromans A.C., Vaudin M., Wallis J.M., Whitehead S.L., Whittaker P., Willey D.L., Williams L., Williams S.A. Wilming L., Wray P.W., Hubbard T., Durbin R.M., Bentley D.R., Beck S.
                 PROSITE;
Thiol pro
SIGNAL
                                                                                                                                                                                                                                           EMBL;
                                                                                                                                                                                                                                                                                                    EMBL;
                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nature
                                                                                                                                                                                                                                                                                                                                                           entities requires a license agreement (S or send an email to license@isb-sib.ch).
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                                                                                      GO; GO:0004869; F:cysteine proteas
GO; GO:0006955; F:immune response;
InterPro; IPR000010; Cystatin.
Pfam; PF00031; Cystatin; 1.
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                                                                                                                                                                      MIM; 603253;
                                                                                                                                                                                       Genew;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and spleen.
SIMILARITY: Belongs to the cystatin family.
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; BC015507;
; P01034; 10
                                                                                                                                                                                                                                                               AB015225;
AB029636;
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AF031824;
                                   protease inhibitor;
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414:865-871(2001).
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BAB11886.1;
CAB75498.1;
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AAC39788.1;
                                                                                                                                                                                                                           AAH15507
                                                                                                                                                                                       CST7
                                                     CYSTATIN; FALSE_NEG.
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; Glycoprotein; POTENTIAL.
CYSTATIN F.
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                                                                                                                                                protease
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                                   Signal
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CYT_BITAR
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P01038;

21-JUL-1986 (Rel. 01, C

01-OCT-1989 (Rel. 12, I

28-FEB-2003 (Rel. 41, I
                                                                  CHICK
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CARBOHYD
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Cystatin precursor (Egg-white cystatin).

Gallus gallus (Chicken).

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
                                                                                                                                                           DISULFID
VARIANT
                                                                                                                                                                                             Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
PROSITE; PS00287; CYSTATIN;
                                                                                                                                                                                                                                                                  MEDLINE=88076861; PubMed=3500714;
Ritonja A., Evans H.J., Machleidt W., Ba
"Amino acid sequence of a cystatin from
                                                                                                                                                                                                                                                                                                                        Bitis arietans (African puff adder).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Lepidosauria; Squamata; Scleroglossa; Serpentes; Colubroidea;
                                                                                                                                                                                                                         PIR; A28793; A28793.
HSSP; P01038; 1CEW.
                                                                                                                                                                                                                                                      Biochem.
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28-FEB-2003
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Dieckmann T., Mitschang L., Hofmann M., Kos J., Turk V., Auerswald E.A., Jeanicke R., Oschkinat H.;
"The structures of native phosphorylated chicken cystatin and of a recombinant unphosphorylated variant in solution.";
J. MOL. Biol. 234:1048-1059(1993).
-i- FUNCTION: This protein binds tightly to and inhibits a variety thiol proteases including ficin, papain, and cathepsins B, C, H and L. Although isolated from egg white, it is also present in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Anastasi A., Brown M.A., Kembhavi A.A., Nicklin M.J.H., Sayers C Sunter D.C., Barrett A.J.; "Cystatin, a protein inhibitor of cysteine proteinases. Improved purification from egg white, characterization, and detection in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Protein inhibitors of cysteine proteinases. III. Am of cystatin from chicken egg white."; Hoppe-Seyler's Z. Physiol. Chem. 364:1487-1496(1983)
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Turk V., Brzin J., Longer M., Ritonja A.,
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MEDLINE=84178305; PubMed=6712597;
Schwabe C., Anastasi A., Crow H.,
"Cystatin. Amino acid sequence an
Biochem. J. 217:813-817(1984).
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This SWISS-PROT entry is copyright. It is between the Swiss Institute of Bioinformatics Institute. The European Bioinformatics Institute. The by non-profit institutions as long
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"The 2.0 A X-ray crystal structure of its possible mode of interaction with
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Laber B., Krieglstein K., Hensche
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MEDLINE=94087719; PubMed=8263912;
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MEDLINE=89052676; PubMed=3191914;
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                                                                                                                      SIMILARITY: Belongs to the cystatin family.
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           TISSUE=Leukocyte;
MEDLINE=90303202; P
Abrahamson M., Olaf
Jensson O., Grubb #
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(Post-gamma-globulin).
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"Molecular cloning and sequence analysis of
precursor of the human cysteine proteinase i
FEBS Lett. 216:229-233(1987).
                                                                                                                                                                  TISSUE-Placenta;
PubMed=3495457;
MEDLINE=87219149; PubMed=3495457;
Olafeson I.,
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Mammalia; Eutheria;
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REACTIVE SITE.
SECONDARY AREA
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Pred. No. 2
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                                                                                                                                                                              Lundwall
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RA Jones M., Starvides G., Almeida J.P., Babbage A.K., Bagguley C.L.,
RA Bailey J., Barlow K.F., Bates K.N., Beard L.M., Beare D.M.,
RA Beasley O.P., Bird C.P., Blakey S.E., Bridgeman A.M., Brown A.J.,
RA Beasley O.P., Burtll W.D., Butler R.P., Carder C., Carter N.P.,
RA Chegy S., Cobley V.E., Collier R.E., Connor R.E., Corby N.R.,
RA Chegy S., Cobley V.E., Collier R.E., Connor R.E., Corby N.R.,
RA Chillington A., G., Frankland J.A., Fraser A., French L., Garner P.,
RA Ellington A.G., Frankland J.A., Fraser A., Prench L., Garner P.,
RA Ellington A.G., Frankland J.A., Fraser A., Prench L., Garner P.,
RA Hammond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J.,
RA Hammond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J.,
RA Huckle B., Hunt A.R., Hunt S.E., Jekosch K., Johnson C.M., Johnson D.,
RA Kay M.P., Kimberley A.M., King A., Kinghts A., Laird G.K., Lawlor S.,
RA Kay M.P., Kimberley A.M., King A., Kinghts A., Laird G.K., Lawlor S.,
RA Marsh V.L., Martin S.L., McConnachie L.J., McLay K., McMurray A.A.,
RA Milne S.A., Mistry D., Moore M.J.F., Mullikin J.C., Nickerson T.,
RA Oliver K., Parker A., Patel R., Pearce T.A.V., Peck A.I.,
RA Phillimore B.J.C.T., Prathalingam S.R., Plumb R.W., Ramsay H.,
RA Skuen R.M., Sycamore N., Tsoott C.E., Sehra H.K., Shownkeen R., Sims S.,
RA Swann R.M., Sycamore N., Tsoott C.E., Steward C.A., Sulston J.E.,
RA Syann R.M., Sycamore N., Tsoott C.E., Steward C.A., Sulston J.E.,
RA Mynn R.M., Sycamore N., Tsoott C.E., Thomas D.M., Thorpe A.,
         Strausberg R.L., Peingold E.A., Grouse L.H., Derge J.G.,
Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.B.,
Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
Raha S.S., Loquellano N.A., Peters G.J., Abrammon R.D., Mullahy S.J.,
Bosak S.A., McEwan P.J., McKerrana K.J., Malek J.A., Gunaratne P.H.,
Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
Villalon D.K., Muzny D.M., Sodergren B.J., Lu X., Gibbs R.A.,
Fahey J., Helton B., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
                                                                                                                                                                                                                                                                                                                                                        Skuce C.D., Smith M.L., Soderiund C., Stewart C..., Thorpe A., Swann R.M., Sycamore N., Taylor R., Tee L., Thomas D.W., Thorpe A., Tracey A., Tromans A.C., Vaudin M., Wall M., Wallis J.M., Williams S. Whitehead S.L., Whittaker P., Willey D.L., Williams L., Williams S. Wilming L., Wray P.W., Hubbard T., Durbin R.M., Bentley D.R., Beck
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Acquisition of epithelial cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Saitoh E., Sabatini
Isemura S., Sanada I
                                                                                                                                                                                                                           MEDLINE=22388257; PubMed=12477932;
Strausberg R.L., Feingold B.A., Grouse L.H.,
                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                        Nature
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=21638749;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (NOV-2000)
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Dickinson D.P., He
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=89350949;
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                                                                                                                                                                                                                                                                                                                                             "The DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                        NA sequence and comparative 414:865-871(2001).
                                                                                                                                                                                                                                                                                    FROM N.A.
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29ez-Otin C., Ghiso J., Geltner D.,
Icelandic patients with hereditary
a mutation in the cystatin C gene,
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ni L.M., Eddy R.L.,
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terns of differential
during the evolution
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n. 162:1324-1331(1989)
                                                                                                                                                                                                                                                                                                                                           analysis
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D., Babbage
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A.K.,
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an inhibitor
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Sulston J.E.,
D.W., Thorpe A.,
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or send a
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Hum. Genet. 89:377-380 (1992).
                                                     This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EWBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Human cystatin C, an amyloidogenic protein, three-dimensional domain swapping."; nat. Struct. Biol. 8:316-320(2001).
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Janowski R., Kozak M., Jankowska
Abrahamson M., Jaskolski M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C., Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Shaleka U., Smailus D.E., Butterfield Y.S.N., Krzyvinski M.I., Skaleka U., Smailus D.E., Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.; "Generation and initial analysis of more than 15,000 full-length human and mouse cDNA sequences"; human and mouse cDNA sequences."; Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Protein inhibitors of cysteine proteinases. III. Amino-acid sequence of cystatin from chicken egg white.";
Hoppe-Seyler's Z. Physiol. Chem. 364:1487-1496(1983).
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Grubb A., Loefberg H., Barrett A.J.;
"The disulphide bridges of human cys"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Brzin J., Popovic T., Turk V.; "Human cystatin, a new protein inhibitor of cysteine proteinases."; Biochem. Biophys. Res. Commun. 118:103-109(1984).
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MEDLINE=84110059; PubMed=6662498;
MEDLINE=84110059; PubMed=6662498;
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MEDLINE=82222268; PubMed=6283552;
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                                                                                                                                                                                                                                                                             submandibular gland.

submandibular gland.

DISEASE: Defects in CST3 are a cause of hereditary cerebral hemorrhage with amyloidosis (HCHWA) [MIM:105150]; also known as cerebral amyloid anglopathy (CAA) or cerebroarterial amyloidosis cerebral amyloid anglopathy (CAA) or the baracterized by a thickening of the Icelandic type. HCHWA is characterized by a thickening of the local type walls with deposition of material with the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SUBUNIT: Homodimer.
TISSUE SPECIFICITY: Expressed in highest levels
                                                                                                                                                                                                                                             SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      thought to serve an important
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   regulator of this enzyme activity.
      an
requires a license agreement (See http://www.isb-sib.ch/announce/an email to license@isb-sib.ch).
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:1. Acad. Sci. U.S.A. 79:3024-3027(1982)
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Best Local
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15-JUL-1998
28-FEB-2003
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                    between the Swiss Institute of Bioinformatics and the E the European Bioinformatics Institute. There are no rest use by non-profit institutions as long as its content modified and this statement is not removed. Usage by an entities requires a license agreement (See http://www.isb-or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                       019092;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL;
EMBL;
EMBL;
EMBL;
                                                                                                                                                                                       MEDLINE=97054523; PubMed=8898820;
Wei L.H., Walker L.C., Levy E.;
"Cystatin C. Icelandic-like mutation
                                                                                                                                                                                                                                                                        Macaca mulatta (Rhesus macaque).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CHAIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL;
EMBL; U51912;
                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                cerebrovascular beta-amyloidosis.
Stroke 27:2080-2085(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR000010; Cys
Pfam; PF00031; cystatin;
SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL;
                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                               Cercopithecinae;
NCBI_TaxID=9544;
                                                                                                                                                                                                                                                                                                                         Cystatin C precursor.
                                                                                                                                                                                                                                                                                                                                                                                    CYTC
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PDB; 1G96; 06-APR-
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Thiot
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Genew;
                                                                                                               FUNCTION: As an inhibitor of cysteine proteinases thought to serve an important physiological role regulator of this enzyme activity.

SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   L; X05607; CAA29096.1; -.

L; X52255; CAA36497.1; -.

L; M27891; AAA52164.1; JOINED.

L; M27899; AAA52164.1; JOINED.

L; M27890; AAA52164.1; JOINED.

L; X61681; CAA43856.2; -.

L; X61682; CAA43856.2; JOINED.

L; X61683; CAA43856.2; JOINED.

L; X61683; CAA43856.2; JOINED.

L; X61683; CAA43856.2; JOINED.

L; X61683; CAA43856.2; JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 604312;
                                                                                                                                                                                                                                                                                                                                                                                    MACMU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         protease inhibitor; Amyloid; Signal; Disease mutation
                                                                                                                                                                                                                                                                                                                                                                                                                                              80
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8 (Rel. 36, Last a
3 (Rel. 41, Last a
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27
37
81
89
123
AAB64050.1;
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REACTIVE SITE.
SECONDARY AREA
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Pred. No. 2.
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                                  (See http://www.isb-sib.
                                                                                                                                                                                                                                                                                                                                    update)
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as a local
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                                                                              EMBL outstation
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DR HSSP; P01034; 1G96.

DR InterPro; IPRO00010; Cystatin.

DR Pfam; P700031; Cystatin; 1.

DR SMART; SM00043; CY; 1.

DR PROSITE; P$00287; CYSTATIN; 1.

ET SIGNAL

PT SIGNAL

PT ACT SITE

PT ACT SITE

PT DISULFID

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PT DISULFID

PT STEE

PT DISULFID

PS SEQUENCE

PT DISULFID

PS SEQUENCE

PT A64, 15857 MW; P083BB774A29DF26 CRC64;

Query Match

Best Local Similarity

Pred. No. 2.8;

Matches

PROSITE; STEE

Matches

PROSITE; P$00287; CYSTATIN; 1.

BEST Local Similarity

PROSITE A73

PROSITE; P$00287; CYSTATIN; 1.

BY SIMILARITY.

POB3BB774A29DF26 CRC64;

Query Match

PROSITE; P$00287; CYSTATIN; 1.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

POB3BB774A29DF26 CRC64;

Query Match

Pred. No. 2.8;

Matches

PROSITE; P$0038; Pred. No. 2.8;

Matches

PROSITE; P$00287; CYSTATIN; 1.

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Listing first 45 summaries
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence:
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                           Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
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length: 2000000000
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1: sp_archea:*
2: sp_bacteria:*
3: sp_fungi:*
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138
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sp_unclassified:*
sp_rvirus:*
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SUMMARIES
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50	50	50	51.5	51.5	52	52	52	52	53	57	57	60	60	84	138	Score
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Q8DN24	Q97N97	Q9YVN4	Q8T1F5	Q83XK8	Q9U6B4	Q9VLM8	Q8T9K4	Q8T9G8	018150	Q94M04	Q8DS42	Q80ZN5	Q9DAP1	Q8K5A3	90XM8D	ij
Q8dn24 streptococc	Q97n97 streptococc	Q9yvn4 melanoplus	Q8t1f5 dictyosteli	Q83xk8 legionella		Q9vlm8 drosophila		Q8t9g8 drosophila	O18150 caenorhabdi	Q94m04 bacteriopha	Q8ds42 streptococc	Q80zn5 mus musculu	Q9dap1 mus musculu	Q8k5a3 rattus norv	Q8wxu6 homo sapien	Description

4 5	44	43	42	41	40	9	38	37	36	ω 5	34	3 3	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
46	46	46.5	46.5	46.5	46.5	47	47	47	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	48	48	48	48	48.5	49	49	49	49.5
33.3	33.3	33.7	33.7	33.7	33.7	34.1	34.1	34.1	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.8	34.8	34.8	34.8	35.1	35.5	35.5	35.5	35.9
167	79	678	371	367	199	1139	392	273	1308	995	935	787	737	693	631	610	544	421	302	1078	1078	278	278	3546	167	148	140	256
11	15	N	10	10	10	IJ	S	16	17	4	v	11	4.	11	4	4	σ	4	4	10	10	16	16	N	4.	11	11	9
Q9QWL5	Q07406	Q83XL6	Q9C6P7	Q9C6R6	Q9FFG2	Q9VWI5	Q9VY83	Q82CK5	Q9V2G5	Q9HCI8	Q18671	Q8BI82	Q8ND82	Q8K145	Q9NXR3	Q9UJJ2	Q28548	Q9NXS0	Q9H740	Q7XH40	Q94LJ7	Q814B4	Q81VI4	Q9F830	Q7Z4J8	Q9JM84	Q9EPX9	Q7Y4K3
Q9qwl5 mus musculu	Q07406 simian t-ly	Q83x16 legionella		Q9c6r6 arabidopsis		Q9vwi5 drosophila	Q9vy83 drosophila	Q82ck5 streptomyce	Q9v2g5 pyrococcus	Q9hci8 homo sapien	Q18671 caenorhabdi	Q8bi82 mus musculu	Q8nd82 homo sapien	Q8k145 mus musculu	Q9nxr3 homo sapien	Q9ujj2 homo sapien	Q28548 ovis aries	Q9nxs0 homo sapien	Q9h740 homo sapien		Q94lj7 oryza sativ	Q814b4 bacillus ce	Q81vi4 bacillus an	Q9f830 micromonosp	Q7z4j8 homo sapien	Q9jm84 mus musculu	Q9epx9 mus musculu	Q7y4k3 streptococc

ALIGNMENTS

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RESULT 2
Q8K5A3
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AC Q8K5
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Matches 24
Q8K5A3;
Q8K5A3;
01-OCT-2002
01-OCT-2002
                                                                                                                                                                                                                                     SEQUENCE FROM N.A.

Hamil K.G., Liu Q., Zhang Y.-L., French F.S., Hall S.H.;

"SC13: A novel epididymal specific member of the cystatin family.";

Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.

EMBL; AF335480; AAL71991.1; -.

GO; GO:0004869; F:cysteine protease inhibitor activity; IEA.

InterPro; IPR000010; Cystatin.

Pfam; PF00031; cystatin; 1.

SMART; SM00043; CY; 1.

SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QBWXU6, PRELIMINARY; PRT; 138 AA.
QBWXU6, 01-WAR-2002 (TrEMBLrel. 20, Created)
01-MAR-2002 (TrEMBLrel. 20, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
MCBI_TaxID=9606;
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                                                                                                                                                                               24;
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                                                                                                                   ROVIDHLEYHLNVEMOWITCOKPE 98
                                                                                                                                                                             100.0%; Score 138; DB 4; ilarity 100.0%; Pred. No. 6.4e-14; Conservative 0; Mismatches 0;
(TrEMBLrel. 22, Created)
(TrEMBLrel. 22, Last sequence update)
                                             PRELIMINARY;
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AA; 16506 MW;
                                             PRT;
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Cystatin CST11.

01-JUN-2003 Cystatin 11

(TrEMBLrel.

24,

Last annotation update)

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                                                                                                                                                                                                                                                                                                                A Kawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,
A Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
A Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
A Salto T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
A Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
A Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
A Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
A Kadota K., Matsud Y., Nikaido I., Pesole G., Quackenbush J.,
A Kuchl P., Lewis S., Matsud Y., Nikaido I., Pesole G., Quackenbush J.,
A Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,
A Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
A Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
A Sakai K., Okido T., Futuno M., Aono H., Baldarelli R., Barsh G.,
A Sakai K., Okido T., Fletcher C., Fujita M., Gariboldi M.,
A Blake J., Boffelli D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
A Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,
A Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,
A Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
B Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
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Best Local (
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EMBL; AK005665; BAB24175.1;
HSSP; P01038; 1CEW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-JUN-2003 (TrEMBLrel 1700006C19Rik protein.
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GO; GO:0004869; F:Cystaine protease
InterPro; IPR000010; Cystatin.
Pfam; PF00031; Cystatin; 1.
SMART; SM00043; CY; 1.
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Hamil K.G., Hall S.H.;
Submitted (APR-2002) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                              InterPro; IPR000010; Cystatin.
Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
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MEDLINE=21085660;
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01-JUN-2001
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Hayashizaki Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM
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                                                                                                                                                                                                                                              "Functional annotation of a full-length
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                                                                                                          ; MGI:1916544; 1700006C19Rik.
GO:0004869; F:cysteine protease inhibitor activity;
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; PubMed=11217851;
                                                                                                                                                                                                                                                                                               Yoshida K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16686 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60.9%;
     MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6
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Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                               Hasegawa Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
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Sciurognathi; Muridae; Murinae; Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     E1E36DB786B4D08C CRC64;
     C20FA0D8B1AC378C
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             141
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2.2e-05;
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                                                                                                                                                                                                                                                                                               Kawaji H., Kohtsuki S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    update)
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     CRC64;
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RESULT
Q80ZN5
    RESULT
Q8DS42
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Best Local
MEDLINE=2295063; PubMed=123>,,,, Savic G., Chang J., Ajdic D., McShan W.M., McLaughlin R.E., Savic G., Chang J., Ajdic D., McShan W.M., McLaughlin R.E., Savic G., Chang Jia H., Lin S., Carson M.B., Primeaux C., Tian R., Kenton S., Jia H., Lin S., Ferretti Li S., Zhu H., Najar F., Lai H., White J., Roe B.A., Ferretti Li S., Zhu H., Najar F., Lai H., White J., Roe B.A., Ferretti McAnome sequence of Streptococcus mutans UA159, a cariogenic
                                                                                                                                                                                                                                                                                                                                                                                                                       01-MAR-2003
01-MAR-2003
01-OCT-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q8DS42
Q8DS42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pfam; PF00031; cystatin; 1.
ProDom; PD001231; Cystatin_C/M; 1.
SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Strausberg R.; Submitted (MAR-2003) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-JUN-2003 (TrEMBLrel. 24,
01-OCT-2003 (TrEMBLrel. 25,
RIKEN cDNA 1700006C19 gene.
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01-JUN-2003
                                                                                                                                                                                                                                                                                                                                          Streptococcus mutans. Bacteria; Firmicutes;
                                                                                                                                                                                                                                                                                                                                                                                    Putative ABC transporter, ADCC OR SMU.1994.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; BC048681; AAH48681.1; -.
GO; GO:0004869; F:cysteine protease
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                                                                              EMBL; AE015022;
                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
STRAIN=UA159 / ATCC 700610 / Serotype
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InterPro; IPR003243; Cystatin_C/M.
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                                                                                                   Acad. Sci. U.S.A.
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                                                                                                                                                                                                                                                                                                                                                           mutans.
                    AAN59598.1; -.
C:membrane; IEA.
F:ATP binding; IEA.
F:ATP-binding cassette
    F:nucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Chordata;
Rodentia;
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                                                                                                                                                                                                                                                                                                                                            Lactobacillales;
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23, Last sequence update)
25, Last annotation updat
27, ATP-binding protein.
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Pred. No.
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Pred.
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0.14;
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                        transporter acti.
                                                                                                                                                                             G., Chang J.,
Jia H., Lin S.,
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RESULT
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Matches 9
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Best Local Similarity
Matches 10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                              O18150 PRELIMINARY;
O18150; O45627;
O1-JAN-1998 (TREMBLrel. 05, C
O1-NOV-1998 (TREMBLrel. 08, L
O1-OCT-2003 (TREMBLrel. 25, L
T28B8.4 protein.
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                                                                                                                                                                                                                                                                                                                                                  Caenorhabditis elegans.
Eukaryota; Metazoa; Nemat
Rhabditidae; Peloderinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gottlieb P.J., Potgieter C., Wei H., Toporovsky I.;
"Characterization of Bacteriophage phil2.";
Submitted (AUG-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; AP408636; AAL01109.1; -.
InterPro; IP8006162; PPOSTHOPANTETHEINE; 1.
SEQUENCE 723 AA; 78950 MW; F5DEF7FF93A50B7C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR003593; AAA ATPase.
InterPro; IPR003439; ABC transporter.
Pfam; PP00005; ABC tran; 1.
ProDom; PD00006; ABC transporter; 1.
SMART; SM00382; AAA; 1.
   MEDLINE=94150718; PubMed=7906398; Wilson R., Ainscough R., Anderson K Bonfield J., Burton J., Connell M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacteriophage phi-12.
Viruses; dsRNA viruses;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PROSITE; PS00211; ABC_TRANSPORTER_1; 1.
PROSITE; PS5089; ABC_TRANSPORTER_2; 1.
ATP-binding; Complete proteome.
SEQUENCE 236 AA; 26812 MW; 1BAB8DD7
                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                Submitted
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[1]
                                                                                                                                                                                                                    White
                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                              NCBI_TaxID=6239;
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Local Similarity 50.0%;
nes 9; Conservative
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                                                                                                                                                                                                                                                                                                                                                         oda; Chromadorea; Caenorhabditis.
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Last annotation updat
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Pred. No. 0.
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K., Baynes C., Berks M.
., Copsey T., Cooper J.,
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0.7;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
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A Champe M., Chavez C., Dorsett V., Farfan D., Frise E., George R.,
A Gonzalez M., Guarin H., Li P., Liao G., Miranda A., Mungall C.J.,
A Nunco J., Pacleb J., Paragas V., Park S., Phouanenavong S., Wan K
A Yu C., Lewis S.E., Rubin G.M., Celniker S.;
Submitted (DEC-2001) to the EMBL/GenBank/DDBJ databases.

EMBL, AY069773, AAL39918.1;
R EMBL, AY069773, AAL39918.1;
R FlyBase; PBgn0027094; Aats-ala.
RR GG; GG:0004813; F:allanine-tRNA ligase activity; IEA.
RGG; GG:0005524; F:ATP binding; IEA.
RGG; GG:0003576; F:nucleic acid binding; IEA.
RGG; GG:0003676; P:allanin-tRNA aminoacylation; IEA.
RGG; GO:0003676; P:allanin-tRNA aminoacylation; IEA.
                               Query Match
Best Local
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Best Local (
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01-JUN-2002
01-JUN-2002
01-OCT-2003
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (DEC-1997) to the EMBL/GenBank/DDBJ databases. EMBL; Z81133; CAB03445.1; -
EMBL; AL021066; CAB03445.1; JOINED. EMBL; AL021066; CAB15925.1; -
                                                                                                            Pfam; PF02272; DHHA1; 1.

Pfam; PF01411; tRWA-synt 2c; 1

PR0STTE; PS50860; AA TRWA LIGAX

SEQUENCE 540 AA; 59580 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
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AATS-ALA OR CG13391.
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EMBL; AL021066; CAA15925.1; -
EMBL; ZB1133; CAA15925.1; JOINED.
PIR; T23130; T23130,
WormPep; T28B8.4; CE16519.
InterPro; IPR008938; ARM.
                                                                                                                                                                                                               InterPro; IPR003156; DHHA1.
InterPro; IPR002318; tRNA-synt_2c.
InterPro; IPR006193; tRNA_synt_Ala.
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Similarity
9; Conserv
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? (TrEMBLrel.)
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                            50.0%;
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21,
25,
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Last annotation update)
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Pred. No.
                                                        Score 52;
                            Pred.
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                                                                                                              B870DCF9C386843B CRC64;
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                               No. 10;
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AC Q9VLW
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A Yu C., Lewis S.E., Rubin G.M., Celniker S.;
L Submitted (DEC-2001) to the EMBL/GenBank/DDBJ databases.
R EMBL; AY069255; AAL39400.1; .
R FlyBase; FBgn0027094; Aats-ala.
R GO; GO:0004813; F:alanine-tRNA ligase activity; IEA.
R GO; GO:0004813; F:ATP binding; IEA.
R GO; GO:0005274; F:ATP binding; IEA.
R GO; GO:000576; F:nucleic acid binding; IEA.
R GO; GO:000576; P:nucleic acid binding; IEA.
R GO; GO:000576; P:nucleic acid binding; IEA.
R GO; GO:000619; P:alanyl-tRNA aminoacylation; IEA.
R InterPro; IPR001156; DHHAI.
R InterPro; IPR001156; DHHAI.
R InterPro; IPR001156; DHHAI.
R InterPro; IPR001156; DHHAI.
R Ffam; PF01411; tRNA-synt_2c; 1.
R Pfam; PF01411; tRNA-synt_2c; 1.
R Pfam; PF01411; tRNA-synt_2c; 1.
R Pfam; PF01411; tRNA-synt_2c; 1.
R TIGEPEMBE. TIEROCALA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q8T9K4;
Q8T9K4;
01-JUN-2002
01-JUN-2002
01-OCT-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q9VLM8;
Q9VLM8;
01-MAY-2000
01-MAY-2000
STRAIN=Berkeley;
MEDLINE=20196006; PubMed=10731132;
Adams M.D., Celniker S.E., Holt R.A., Ev
Amanatides P.G., Scherer S.E., Li P.W.,
George R.A., Lewis S.E., Richards S., A
                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Arthropoda; Hexapoda; Inse
Neoptera; Endopterygota; Diptera; Brachycera;
Ephydroidea; Drosophilidae; Drosophila.
NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-OCT-2003 (TremBLr
AATS-ALA protein.
AATS-ALA OR CG13391.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TIGREAMS;
PROSITE; P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Drosophila melanogaster (Fruit i
Eukaryota; Metazoa; Arthropoda;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GM03058p.
AATS-ALA OR CG13391.
                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                Drosophila melanogaster (Fruit fly).
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Ephydroidea; Drosophilidae;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; TIGR00344; alas; 1.
PS50860; AA TRNA LIGASE II ALA; 1.
966 AA; 107697 MW; 9F2079A119F463E4 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QVTDHLEYHLNVEMQWTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KVGDELELHIDVERRWLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 */ | | | | :: | | :| |
KVGDELELHIDVERRWLT
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(TrEMBLrel.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (TrEMBLrel. 13,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             37.7%;
50.0%;
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Dorsett V., Farfan D., Frise E., George
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 52; DB 9
Pred. No. 19;
4; Mismatches
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   Evans C.A., Gocayne J.D.., Hoskins R.A., Galle R. Ashburner M., Henderson
                                                                                                                                                                                                                                                                                                                                     Insecta; Pterygota;
era; Muscomorpha;
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                  S.N.,
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RESULT 11
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RA Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Bolshakov S.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Burtis K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I.,
RA Cherry J.M., Cawley S., Dahlke C., Dyan-Rocha S., Dunkov B.C., Dunn P.,
RA Cherry J.M., Delcher A., Deng Z., Mays A.D., Dew I., Dietz S.M.,
RA Cherry J.M., Cawley S., Dahlke C., Perrace S., Pleischmann W.,
RA Durbin K.J., Evangelists C.C., Ferrace C., Ferrace S., Pleischmann W.,
RA Glodek A., Gong P., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Glodek A., Gong P., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Harris N.L., Harvey D., Heinann T.J., Hernandez J.R., Houck J.,
RA Harris N.L., Harvey D., Heinan T.J., Hernandez J.R., Houck J.,
RA Harris N.L., Harvey D., Heinan T.J., Hernandez J.R., Houck J.,
RA Harris N.L., Harvey D., Heinan T.J., Hernandez J.R., Houck J.,
RA Harris N.L., Malush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A.,
RA Kinmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Lasko P., Lei Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X.,
RA Mount S.M., Moy M., Murphy B., Murphy L., Murpy D.M., Neshorefi A.,
RA Melson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M.,
RA Melson D.R., Nelson K.S., Janeers R.D.C., Scheeler F., Shen H.,
RA Shue B.C., Siden-Kiamos I., Simpson M., Skupski M.P., Smith T.,
RA Spier E., Spradling A.C., Stapleton M., Skupski M.P., Smith T.,
RA Williams S.M., Moodage T., Weinstock G.M., Weinschach J.,
RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weinschach J.,
RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weinschach J.,
RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Sung S., Yao Q.A.,
RA Williams S.M., Moyodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
RA Wang Z.-Y., Wassarman D.R., Weinstock G.M., Wang X., Smith H.O.,
RA Globel S. A., Weyers B.W., Zhou Y., Zhu X., Smith H.O.,
RA Globel S. A., Weyers B
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Best Local S
Matches 9
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Q9U6B4;
                                                                                                                                                                  01-MAY-2000 (TrEMBLrel. 13, 01-MAY-2000 (TrEMBLrel. 13, 01-OCT-2003 (TrEMBLrel. 25, Alanyl-trnA synthetase. AATS-ALA OR ALAS OR CG13391.
                                Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
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Pfam; PF01411; tRNA-synt 2c; 1.
PRINTS; PR00980; TRNASYNTHALA.
TIGRPAMS; TIGR00344; ala6; 1.
PROSITE; PS50860; AA TRNA LIGASE
SEQUENCE 966 AA; 107741 MW; H
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InterPro; IPR002318; tRNA-8;
InterPro; IPR006193; tRNA_8;
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    Ephydroidea;
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Drosophilidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     37.7%;
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                                                                                                                                                                                                                                                           Created)
Last sequence update)
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    Drosophila
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Pred. No. 19;
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Baldwin D.,
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RESULT 12
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1D 033XK
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AC Q83XK
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DT 01-JI
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        RESULT 13
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R GO; GO:0004813; F:alanine-tRNA ligase activity; IEA.

R GO; GO:0005524; F:ATP binding; IEA.

R GO; GO:0005526; F:nucleic acid binding; IEA.

R GO; GO:0003576; F:nucleic acid binding; IEA.

R GO; GO:0003676; F:nucleic acid binding; IEA.

R GO; GO:0003156; DHHA1.

R InterPro; IPR003156; DHHA1.

R InterPro; IPR002318; tRNA-synt_2c.

R InterPro; IPR00318; tRNA_synt_Ala.

R Ffam; PF02272; DHHA1; 1.

R Pfam; PF02272; DHA1; 1.

R Pfam; PF01411; tRNA-synt_2c; 1.

R Pfam; PF01411; tRNA-synt_Ala.

R PRINTS; PR00980; TRNASYNTHALA.

TIGRPAMs; TIGR00344; alaS; 1.

R PROSITE; PS50860; AA TRNA_LIGASE_II_ALA; 1.

M Aminoacyl-tRNA synthetase.

D SEQUENCE 966 AA; 107877 MW; 82034A189F0C81E5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q83XK8 PR
Q83XKB;
01-JUN-2003 (T
01-JUN-2003 (T
01-OCT-2003 (T
Lsey protein.
            Q8T1F5
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Pfam;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Legionella pneumophila.
Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; AJ560770; CAD90962.1; -. GO; GO:0016020; C:membrane; IEA. InterPro; IPR008934; ACPase VanPerase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted (MAY-2003) to the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN=Philadelphia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro;
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[1]
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PF01569;
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9; Conserv
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                                                                                                                                                                                                            QVHDHMPYHKEFTLTEKQWWDQQRP 504
                                                                                                                                                                                                                                                                                         QVTDHLEYHLN---VEMOWTTCQKP 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IPR000252; DedA.
IPR000326; PA_PTPase.
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                                                                                                                                                                                                                                                                                                                                                                               Conservative
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            PRELIMINARY;
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                                                                                                                                                                                                                                                                                                                                                                                                             37.3%;
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Pred. No. 16;
2; Mismatches
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Pred. No. 19;
        PRT;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AC817B2813F03DAF CRC64;
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Q9YVN4;
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STRAIN=Tucson;
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REMBL; AC116959; AAMO8443.2; ...

RGO; GO:0005524; F:ATP binding; IEA.

RGO; GO:0004674; F:protein serine/threonine kinase activity; IEA.

RGO; GO:0004713; F:protein-tyrosine kinase activity; IEA.

RGO; GO:0007242; P:intracellular signaling cascade; IEA.

RGO; GO:0006468; P:protein amino acid phosphorylation; IEA.

RINTERPO; IPR001849; PH.

RINTERPO; IPR001849; PX.

RINTERPO; IPR001719; PYCT_kinase.

RINTERPO; IPR00183; PX.

RINTERPO; IPR00183; PX.

RINTERPO; IPR00183; PX.

RINTERPO; IPR00183; PX.

RINTERPO; IPR001847; Ser_thr_pkinase.

RRINTS; PR00109; TYRKINASE.

RR PRINTS; PR00109; TYRKINASE.

RR PROSITE; PS001019; TYRK; 1.

RR PROSITE; PS001017; PROTEIN_KINASE_DOM; 1.

RR PROSITE; PS001019; PROTEIN_KINASE_ST; 1.

RR PROSITE; PS00119; PROTEIN_KINASE_ST; 1.
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01-JUN-2002 (TrEMBLrel. 21, Created)
01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
Similar to Dictyostelium discoideum (Slime mold). p
                                                                                                                                                                                               01-MAY-1999 (TrEMBLrel. 10, Created)
01-MAY-1999 (TrEMBLrel. 10, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
ORF_MSV208 putative uracil_DNA_glycosylase UNG (vac
                                                                      Melanoplus sanguinipes Viruses; dsDNA viruses, Entomopoxvirus B.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gloeckner G., Bichinger L., Szafranski K., Pachebat J., Dear P.,
Lehmann R., Baumgart C., Parra G., April J.F., Guigo R., Kumpf K.,
Tunggal B., Cox E., Quail M.A., Platzer M., Rosenthal A., Noegel A.
"Sequence and analysis of chromosome 2 of Dictyostelium discoideum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Dictyostelium discoideum (Slime mold).
Eukaryota; Mycetozoa; Dictyosteliida;
SEQUENCE FROM N.A.
                                        NCBI_TaxID=83191;
                                                                                                                                                                               to Equine herpesvirus GB:U20824.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
9; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2165 AA;
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                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
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                                                                                                entomopoxvirus
, no RNA stage;
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Pred. No. 55;
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RESULT OLD TO OL
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LEMBL; AE007504; AAK76212.1; -.

DR PIR; C95252; C95252.

DR TICR; SP2158; -.

DR TICR; SP2158; -.

DR GO; GO:0005737; C:cvfr

DR GO; GO:0006853; "

R GO; GO:000P"
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Submitted (MAY-1998) to the EMBL/GenBank/DDBJ databases.

R EMBL, AF063866; AAC97753.1; -.

R GO; GO:0004844; F:uracil DA N-glycosylase activity; IEA.

R GO; GO:0006281; P:DDA repair; IEA.

R GO; GO:0006281; P:DDA glycsylseSF.

InterPro; IPR005122; UDNA glycsylseSF.

R InterPro; IPR003249; U_glycsylse_notp.

R Pfam; PF03167; UDG; 1.

R ProDom; PD001589; U_glycsylse_notp; 1.

R PF05367; UDG; 1.

R PF05367; UDG; 27297 MW; 85A9B79E1C4F09A0 CRC64;
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01-OCT-2001
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SEQUENCE FROM N.A.

STRAIN-ATCC BAA-334 / TIGR4;

MEDLINE-21357209; PubMed-11463916;

MEDLINE-1357209; PubMed-11463916;

Tettelin H., Welson K.E., Paulsen I.T., Bisen J.A., Read T.D.,

Peterson S., Heidelberg J., DeBoy R.T., Haft D.H., Dodson R.J.,

Peterson S., Gwinn M., Kolonay J.F., Nelson W.C., Peterson J.D.,

Umayam L.A., White O., Salzberg S.L., Lewis M.R., Radune D.,

Umayam L.A., White O., Salzberg S.L., Lewis M.R., Radune D.,

Holtzapple E., Khouri H., Wolf A.M., Utterback T.R., Hansen C.L.,

Holtzapple E., Khouri H., Wolf A.M., Utterback T.R., Hansen C.L.,

McDonald L.A., Feldblyum T.V., Angiuoli S., Dickinson T., Hickey E.K.,

Holt I.E., Loftus B.J., Yang F., Smith H.O., Venter J.C.,

Dougherty B.A., Morrison D.A., Hollingshead S.K., Fraser C.M.;

"Complete genome sequence of a virulent isolate of Streptococcus

"Complete Sections" in Ecology 1
                                                                                                     Isomerase;
SEQUENCE
                                                                                                                                                  GO; GO:0005737; C:cytoplasm; IEA.
GO; GO:0016853; F:isomerase activity; IEA.
GO; GO:0016853; F:L-fucose isomerase activ
GO; GO:0006004; P:fucose metabolism; IEA.
InterPro; IPR004216; Fuc_isomeraseC.
InterPro; IPR009015; Fuc_isomeraseN.
Pfam; PF02952; fucose_iso_C; 1.
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01-OCT-2003
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                                                                                                     06E678EDF801786A CRC64;
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65	65	65	65	65	65	67	67	67	67.5	67.5	67.5	67.5	67.5	67.5	67.5	68.5	70	70	70
34.4	34.4	34.4	34.4	34.4	34.4	35.4	35.4	35.4	35.7	35.7	35.7	35.7	35.7	35.7	35.7	36.2	37.0	37.0	37.0
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ALIGNMENTS

Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sper Human cystatin-8 (Zcys8) antigenic fragment 15-JUL-2002 (first entry) AAU79862; AAU79862 standard; peptide; 01-SEP-2000; 2000US-0230230P 29-AUG-2001; 2001WO-US026868. WO200220567-A2 Homo sapiens. sperm (ZYMO) ZYMOGENETICS INC. 14-MAR-2002. fertilisation; υ U ₽ cryopreserved sperm; #10.

The invention describes an isolated mammalian cystatin-8 (Zcys8) polypeptide (I). (I) is useful for: inhibiting cancer processgulant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm motility and fertilisation; and as antigenic peptides to generate antibodies. Zcys8 is useful as research reagent for characterising sites of interaction between Zcys8 and its receptor. Zcys8 is useful in enhancing fertilisation during assisted reproduction in humans and in animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcys8. The antibodies are also useful to isolate large

Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.

WPI; 2002-383044/41.

Holloway JL, Gao Z,

Bishop

PD;

Claim 2; Page 97; 100pp; English.

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RESULT 2
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associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm motility and fertilisation; and as antigenic peptides to generate antibodies. Zcys8 is useful as research reagent for characteriaing sites of interaction between Zcys8 and its receptor. Zcys8 is useful in enhancing fertilisation during assisted reproduction in humans and in animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcys8. The antibodies are also useful to isolate large quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes. The polymucleotide encoding (I) is useful to detect and to localise the expression of a Zcys8 gene in a biological sample and Zcys8 oligonucleotide probes are useful for in vivo diagnosis. The
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                 The invention describes an isolated mammalian cystatin-8 (Zcys8)

CC polypeptide (I). (I) is useful for: inhibiting cancer procoagulant

CC protein in an individual and thus inhibiting the thrombotic events

CC associated with cancer; promoting spermatogenesis, modulating seminal

CC fluid viscosity, enhancing viability of cryopreserved sperm, sperm

CC motility and fertilisation; and as antigenic peptides to generate

CC antibodies Zcys8 is useful as research reagent for characterising sites

CC of interaction between Zcys8 and its receptor. Zcys8 is useful in

CC enhancing fertilisation during assisted reproduction in humans and in

CC animals. Anti-(I) antibodies are useful to screen biological samples like

CC presence of Zcys8. The antibodies are also useful to isolate large

CC quantities of Zcys8 protein and MA sequences that encode Zcys8 genes.

CC The polymucleotide encoding (I) is useful to detect and to localise the

CC expression of a Zcys8 gene in a biological sample and Zcys8

CC polymucleotide probes are useful for in vivo diagnosis. The

CC copy number changes, insertions in the Zcys8 gene like ancuploidy, gene

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CC The polymucleotide encoding (I) is useful to detect and to localise the colymucleotide probes are useful for in vivo diagnosis. The colymucleotide probes are useful for in vivo diagnosis. The colymucleotide probes are useful for in vivo diagnosis. The colymucleotide probes are useful for in vivo diagnosis. The colymucleotide probes are useful for in vivo diagnosis. The colymucleotide probes are useful for in vivo diagnosis and rearrangements and genetic alterations, deletions, restriction site changes and carrangements and genetic alterations that inactivate the Zcys8 gene.

CC This sequence represents an antigenic peptide of human cystatin-8 (Zcys8)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAU79865;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAU79865 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This sequence represents an antigenic peptide of human cystatin-8 (Zcys8)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (ZYMO ) ZYMOGENETICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2; Page 98; 100pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cystatin-8 (Zcys8) antigenic fragment #13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  59
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 189; DB 5;
Pred. No. 2.2e-18;
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Sequence 80

Query Match Best Local Similarity Matches 33; Conserv

100.0%; ilarity 100.0%; Conservative 0

0

Score 189; DB 5; Pred. No. 4.6e-18;); Mismatches 0;

Length 115;

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Gaps

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Sequence 115 AA;

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RESULT 5
AAU79853
ID AAU7985
ID AAU7
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                                                                                                            CC fluid viscosity, enhancing viability of cryopreserved sperm, sperm cc motility and fertilisation; and as antigenic peptides to generate cc antibodies. Zcys8 is useful as research reagent for characterising sites of interaction between Zcys8 and its receptor. Zcys8 is useful in cc enhancing fertilisation during assisted reproduction in humans and in cc enhancing fertilisation during assisted reproduction in humans and in cc enhancing fertilisation during assisted reproduction in humans and in cc presence of Zcys8. The antibodies are useful to screen biological samples like cc presence of Zcys8. The antibodies are also useful to isolate large cu partities of Zcys8 protein and DNA sequences that encode Zcys8 genes. The polymucleotide encoding (I) is useful to detect and to localise the cc polymucleotide probes are useful for in vivo diagnosis. The cliponucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes and creaters and genetic alterations that insertions the Zcys8 gene.
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                polypeptide (I), (I) is useful for: inhibiting cancer proceagulant protein in an individual and thus inhibiting the thrombotic events
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2002-383044/41.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis;
spermatogenesis; seminal fluid viscosity; cryopreserved spern
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human cystatin-8
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   associated with cancer; promoting spermatogenesis, modulating seminal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 2; Page 94; 100pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Holloway JL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200220567-A2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-SEP-2000; 2000US-0230230P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29-AUG-2001; 2001WO-US026868.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         spermatogenesis;
                                                                                         This sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (ZYMO ) ZYMOGENETICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 QVTDHLEYHLNVEMQWTTCQKPETTNCVPQERE 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QVTDHLEYHLNVEMQWTTCQKPETTNCVPQERE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry
                                                                                         represents
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            describes an isolated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gao Z,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (Zcys8) antigenic fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protein; 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bishop
                                                                                            an
                                                                                         antigenic
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 189; DB 5;
Pred. No. 3.1e-18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         viscosity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ₿
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                                                                                      fragment
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cystatin-8 (Zcys8)
                                                                                            of human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 80;
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                                                                                      cystatin-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sperm;
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RESULT 6
AAU79854
ID AAU7

AAU79854 standard; protein; 117

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AAU79854;

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QVTDHLEYHLNVEMQWTTCQKPETTNCVPQERE 85 QVTDHLEYHLNVEMQWTTCQKPETTNCVPQERE

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QVTDHLEYHLNVEMQWTTCQKPETTNCVPQERE

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                                                                                                                                        Query Match
Best Local :
                                                           Matches
                                                                                                                                                                                      of interaction between Zcys8 and its receptor. Zcys8 is useful in enhancing fertilisation during assisted reproduction in humans and in animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcys8 protein and DNA sequences that encode Zcys8 genes antibodies are also useful to isolate large quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes. The polynucleotide encoding (I) is useful to detect and to localise the expression of a Zcys8 gene in a biological sample and Zcys8 gene oligonucleotide probes are useful for in vivo diagnosis. The polynucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zcys8 gene. This sequence represents an antigenic fragment of human cystatin-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                              fluid viscosity, enhancing viability of cryopreserved sperm, sperm motility and fertilisation; and as antigenic peptides to generate antibodies. Zcys8 is useful as research reagent for characterising sites
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sper sperm motility; fertilisation; antigenic fragment.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   polypeptide (I). (I) is useful for: inhibiting cancer procoagulant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal
                                                                                                                                      Sequence 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2002-383044/41.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human cystatin-8 (2cys8) antigenic fragment
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2; Page 94-95; 100pp; English.
                                                             33;
                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZYMOGENETICS
QVTDHLEYHLNVEMQWTTCQKPETTNCVPQERE
                                                             Conservative
                                                                                                                                        AA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gao Z,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               describes an isolated mammalian cystatin-8 (Zcys8)
                                                         100.0%; Score 189; DB 5; 100.0%; Pred. No. 4.7e-18; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INC.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cryopreserved sperm;
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                                                                                               Length 117;
                                                             Indels
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                                                             Gaps
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QVTDHLEYHLNVEMQWTTCQKPETTNCVPQERE

QVTDHLEYHLNVEMQWTTCQKPETTNCVPQERE

107 33 Matches

33;

Conservative

o ;

Mismatches

Query Match Best Local Similarity

100.0%;

Score Pred.

189; DB 5; No. 5.6e-18;

Length 137; Indels

0

Gaps

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RESULT 7
AAU79852
ID 78AU79852
AAU79852
AAU79852
AAU79852
AAU79852
AAU79852
AAU79852
AAU79852
AAU7
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                                                                   CC associated with cancer; promoting spermatogenesis, modulating seminal Cf fluid viscosity, enhancing viability of cryopreserved sperm, sperm CC motility and fertilisation; and as antigenic peptides to generate CC antibodies. Zcys8 is useful as research reagent for characterising sites CC of interaction between Zcys8 and its receptor. Zcys8 is useful in CC enhancing fertilisation during assisted reproduction in humans and in CC animals. Anti-(I) antibodies are useful to screen biological samples like Diood, urine, saliva, tissue biopsy and autopsy material in vitro for the CC plood, urine, saliva, tissue biopsy and autopsy material in vitro for the CC presence of Zcys8. The antibodies are also useful to isolate large CC quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes. The polynucleotide encoding (I) is useful to detect and to localise the expression of a Zcys8 gene in a biological sample and Zcys8 coligonucleotide probes are useful for in vivo diagnosis. The CC polynucleotide encoding (I) is useful in determining whether a subject's CC chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene CC copy number changes, insertions, deletions, restriction site changes and crearrangements and genetic alterations that inactivate the Zcys8 gene. This is the amino acid sequence of human cystatin-8 (Zcys8)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
    Sequence 137 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             polypeptide (I). (I) is useful for: inhibiting cancer procoagulant protein in an individual and thus inhibiting the thrombotic events
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The invention describes an isolated mammalian cystatin-8 (Zcys8)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 2; Page 93-94; 100pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human cystatin-8 (Zcys8).
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ARESULT 8
AAU79860
ID 79860
ID
RESULT 9
AAU79863
ID AAU7
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                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of interaction between Zcys8 and its receptor. Zcys8 is useful in enhancing fertilisation during assisted reproduction in humans and in animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcys8. The antibodies are also useful to isolate large quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes. The polymucleotide encoding (I) is useful to detect and to localise the expression of a Zcys8 gene in a biological sample and Zcys8 oligonucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene and contain a mutation in the Zcys8 gene like aneuploidy, gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zcys8 gene. This sequence represents an antigenic peptide of human cystatin-8 (Zcys8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The invention describes an isolated mammalian cystatin-8 (Zcys8) polypeptide (I). (I) is useful for: inhibiting cancer procoagulant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm motility and fertilisation; and as antigenic peptides to generate antibodies. Zcys8 is useful as research reagent for characterising sites
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
                            AAU79863 standard; peptide; 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 2; Page 97; 100pp; English
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (ZYMO ) ZYMOGENETICS
                                                                                                                                                                                                        21
                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                            QVTDHLEYHLNVEMQWTTCQKPSTTN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             46
                                                                                                                                                                                                        QVTDHLEYHLNVEMQWTTCQKPETTN
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                                                                                                                                                                                                                                                                                                                                       Conservative
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100.0%; F;
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                                                                                                                                                                                                                                                                                                                                    Score 149; DB 5;
; Pred. No. 5.2e-13;
0; Mismatches 0;
                                                                                                                                                                                                        46
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                                                                                                                                                                                                                                                                                                                                                                                                   Length 46;
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AAU79861 ID AAU7 XX AC AAU7 XX DT 15-J XX

AAU79861 standard; peptide;

24

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15-JUL-2002 AAU79861;

(first entry)

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                                                                                                                                                           The invention describes an isolated mammalian cystatin-8 (Zcys8)
CC polypeptide (I) (I) is useful for: inhibiting cancer procoagulant
CC protein in an individual and thus inhibiting the thrombotic events
CC associated with cancer; promoting spermatogenesis, modulating seminal
CC fluid viscosity, enhancing viability of cryopreserved sperm, sperm
CC motility and fertilisation; and as antigenic peptides to generate
CC antibodies. Zcys8 is useful as research reagent for characterising sites
CC of interaction between Zcys8 and its receptor. Zcys8 is useful in
CC enhancing fertilisation during assisted reproduction in humans and in
CC enhancing fertilisation during assisted reproduction in humans and in
CC enhancing fertilisation during assisted reproduction in humans and in
CC enhancing fertilisation during assisted reproduction in humans and in
CC entraction of zcys8 protein and DNA sequences that encode zcys8 genes.
CC plantities of Zcys8 protein and DNA sequences that encode zcys8 genes.
CC The polymucleotide encoding (I) is useful to detect and to localise the
CC polymucleotide probes are useful for in vivo diagnosis. The
CC polymucleotide probes are useful for in vivo diagnosis.
CC polymucleotide probes are useful for in vivo diagnosis.
CC copy number changes, insertions, deletions, restriction site changes and
CC copy number changes, insertions deletions, restriction site changes and
CC rarrangements and genetic alterations that inactivate the Zcys8 gene.
CC This sequence represents an antigenic peptide of human cystatin-8 (Zcys8)
                                                                                            Query Match
Best Local &
                                                                           Matches
                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation; antigenic peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 2; Page 97-98; 100pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         spermatogenesis, and inhibiting cancer procoagulant proteito inhibition of thrombotic events associated with cancer.
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                                                                           Local Similarity
nes 26; Conserv
  24
                    1 QVTDHLEYHLNVEMQWTTCQKPETTN 26
                                                                                                                                                           49
QVTDHLEYHLMVEMQWTTCQKPETTN
                                                                                                                                                         A,
                                                                             Conservative
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                                                                                            78.8%;
100.0%;
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                                                                           0;
                                                                                              Score 149;
Pred. No.
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                                                                             Mismatches
    49
                                                                                              5.6e-
                                                                                                                    DB 5;
                                                                                                                  Length 49
                                                                               Indels
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RESULT 11
AAU79867
ID AAU79
XX AAU79
XX AAU79
XX IS-JU
DT 15-JU
XX Human
XX KW Cysta
KW Spern
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                                                                                                                                                                                                                                                                                                                                                                                                                   CC polypetide (1). (1) is useful for: inhibiting cancer procedulant CC protein in an individual and thus inhibiting cancer procedulant CC associated with cancer; promoting spermatogenesis, modulating seminal CC fluid viscosity, enhancing viability of cryopreserved sperm, sperm CC motility and fertilisation; and as antigenic peptides to generate CC antibodies. Zcy88 is useful as research reagent for characterising sites CC of interaction between Zcy88 and its receptor. Zcy88 is useful in CC enhancing fertilisation during assisted reproduction in humans and in CC animals. Anti-(1) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcy88. The antibodies are also useful to isolate large CC quantities of Zcy88 protein and DNA sequences that encode Zcy88 genes. CC The polymucleotide encoding (1) is useful to detect and to localise the expression of a Zcy88 gene in a biological sample and Zcy88 genes. CC copy number changes are useful for in vivo diagnosis. The CC copy number changes, insertions, deletions, restriction site changes and carrangements and genetic alterations that inactivate the Zcy88 gene. CC This sequence represents an antigenic peptide of human cystatin-8 (Zcy88)
                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
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Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm;
                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 24 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14-MAR-2002.
                                                      Human cystatin-8 (Zcys8) antigenic fragment #15
                                                                                              15-JUL-2002
                                                                                                                                                                    AAU79867 standard; peptide; 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 2; Page 97; 100pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Holloway JL,
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                                                                                                                                                                                                                                                                                                                                        23;
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                                                                                                                                                                                                                                                                                        1 QVTDHLEYHLNVEMQWTTCQKPE 23
                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                               QVTDHLEYHLNVEMQWTTCQKPE 24
                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                            (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            describes an isolated mammalian cystatin-8 (Zcys8)
                                                                                                                                                                                                                                                                                                       70.4%; bc. 100.0%; Pred. No. 100.0%; Mismatches
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                                                                                                                                                                                                                                                                                                                                                         Score 133; DB 5;
Pred. No. 4e-11;
                                                                                                                                                                                                                                                                                                                                                                           DB 5;
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                                                                                                                                                                                                                                                                                                                                                                         Length 24;
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RESULT 12
ADD46708
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CC polypeptide (I). (I) is useful for: inhibiting cancer procoagulant

CC protein in an individual and thus inhibiting the thrombotic events

CC associated with cancer; promoting spermatogenesis, modulating seminal

CC fluid viscosity, enhancing viability of cryopreserved sperm, sperm

CC motility and fertilisation; and as antigenic peptides to generate

CC antibodies. Zcys8 is useful as research reagent for characterising sites

CC of interaction between Zcys8 and its receptor. Zcys8 is useful in

CC enhancing fertilisation during assisted reproduction in humans and in

CC enhancing fertilisation during assisted reproduction in humans and in

CC enhancing fertilisation during assisted reproduction in humans and in

CC entancing fertilisation during assisted reproduction in humans and in

CC entancing fertilisation during assisted reproduction in humans and in

CC entancing fertilisation during assisted reproduction in humans and in

CC quantities of Zcys8. The antibodies are useful to screen biological samples like

CC presence of Zcys8. The antibodies are also useful to isolate large

CC expression of a Zcys8 gene in a biological sample and Zcys8 genes.

CC oligonucleotide probes are useful for in vivo diagnosis. The

CC polynucleotide encoding (I) is useful to detect and Zcys8.

CC polynucleotide encoding (I) is useful in determining whether a subject's

CC polynucleotide encoding (I) is useful to servation site changes and

CC rearrangements and genetic alterations that incarcivate the Zcys8 gene

CC rearrangements and genetic alterations entitle of human cyclations.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                    ADD46708 standard; protein; 142
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                                                                              Rat; pain; neuronal tissue; gene therapy; spinal segmental nerve injury; chronic constriction injury; CCI; spared nerve injury; SNI; Chung.
                                                                                                                                          Rat Protein AAC36317, SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 2; Page 99; 100pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-SEP-2000; 2000US-0230230P
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sperm motility; fertilisation; antigenic peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This sequence represents an antigenic peptide of human cystatin-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (ZYMO ) ZYMOGENETICS INC
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                                                                                                                                                                                    (first entry
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
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Pred. No. 8.5e-11
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                                                                                                                                          NO 12393
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Rattus norvegicus

WO2003016475-A2

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                                                                                                                                                                                                                                                                                                                                                                                                                                               cc kit to perform the method, an array, a method for identifying an agent that increases or decreases the expression of the polynucleotide sequence that is differentially expressed in neuronal tissue of a first animal content to pain, a method for identifying a compound which regulates the expression of a polynucleotide sequence which is differentially content to pain, a method for identifying a compound that regulates the activity of one or more of the compound that regulates the activity of one or more of the polynucleotides, a method for producing a pharmaceutical composition, a method for identifying a compound or small molecule that regulates the activity in an animal of one or more of the polypeptides given in the specification, a method for identifying a compound useful in treating pain and a pharmaceutical composition comprising the one or more collaboration to polypeptides or their antibodies. The polynucleotide or the compound that modulates its activity is useful for preparing a medicament for treating pain (e.g. spinal segmental nerve injury (Chung), chronic constriction injury (CCI) and spared nerve injury (SNI)) in an animal (e.g. gene therapy). The sequence presented is a rat protein (shown in Table 2 of the specification) which is differentially expressed during pain. Note:
                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            claimed are a vector comprising the novel polynucleotide, a host cell comprising the vector, a method for identifying a nucleotide sequence which is differentially regulated in an animal subjected to pain and a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The invention discloses a composition comprising two or more isolated or human polynucleotides or a polynucleotide which represents a fragme derivative or allelic variation of the nucleic acid sequence. Also
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01-NOV-2001; 2001US-0346382P.
26-NOV-2001; 2001US-0333347P.
Rat; pain; neuronal tissue; gene therapy; spinal segmental nerve injury; chronic constriction injury; CCI; spared nerve injury; SNI; Chung.
                                                            Rat Protein AAC36317, SEQ ID NO 12389.
                                                                                                                                                                                 ADD46704 standard; protein; 142 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            specification,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 1; Page; 1017pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ftp.wipo.int/pub/published_pct_sequences.
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                                                                                                                                                                                                                                                                                                                                                                                   50.3%; Score 95; DB 7; 45.5%; Pred. No. 4.6e-05;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               two or more isolated polypeptides, useful for treating pain in an animal.
                                                                                                                                                                                                                                                                                                                                                                  10; Mismatches
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AAE02404
ID AAE(
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AC AAE(
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AC AAE(
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DT 10-1

AAE02404 standard; protein; 142 AA

10-AUG-2001 AAE02404;

(first entry)

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Query Match
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                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 subjected to pain, a method for identifying a compound which regulates the expression of a polynucleotide sequence which is differentially expressed in an animal subjected to pain, a method for identifying a compound that regulates the activity of one or more of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    kit to perform the method, an array, a method for identifying an agent that increases or decreases the expression of the polynucleotide sequence that is differentially expressed in neuronal tissue of a first animal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         derivative or allelic variation of the nucleic acid sequence. Also claimed are a vector comprising the novel polynucleotide, a host cell comprising the vector, a method for identifying a nucleotide sequence which is differentially regulated in an animal subjected to pain and a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         New composition comprising two or more isolated polypeptides, useful for preparing a medicament for treating pain in an animal.
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01-NOV-2001; 2001US-0346382P
26-NOV-2001; 2001US-0333347P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The invention discloses a composition comprising two or more i 
or human polynucleotides or a polynucleotide which represents
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 1; Page; 1017pp; English.
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                                                                                                                                          l Similarity
15; Conserv
                                                               1 QVTDHLEYHLNVEMQWTTCQKP--ETTNCVPQE 31
QITDRMEYHIDVQISRSNCRKPLNNTENCIPQK 109
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                                                                                                                                          Score 95; DB 7;
Pred. No. 4.6e-0
0; Mismatches
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AAE04433
ID AAE04
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XX Mouse
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Matches 14
20-NOV-1998;
28-SEP-1999;
01-NOV-1999;
                                                                                                                                                                              Mouse; cystatin T; zcys3; testis specific; cystatin-related epididymal specific gene; sperm production; antiinfertility.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The present invention relates to cystatin T (also known as zcys3) DNA and protein sequences. Cystatin T is testis specific and is homologous to cystatin-related epididymal specific gene (CRES) and type 2 cystatins. Cystatins inhibit cysteine proteinases and are found with male reproductive tissues and secretions. Cystatin T sequence is useful for modulating spermatogenesis and studying, diagnosing and treating reproductive disorders. The present sequence is murine cystatin-related
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Murine, cystatin T; zcys3; cystatin-related epididymal specific protein; CRES; inhibitor; cysteine proteinase; male reproductive tissue; testis; spermatogenesis; therapy; reproductive disorder.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cystatin T polypeptides are useful for modulating spermatogenesis studying, diagnosing and treating reproductive disorders.
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28-SEP-1999;
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                                                                                                                       US6245529-B1
                                                                                                                                                    Mus musculus
                                                                                                                                                                                                                                         Mouse cystatin-related epididymal specific
                                                                                                                                                                                                                                                                        04-SEP-2001
                                                                                                                                                                                                                                                                                                                                 AAE04433 standard; protein; 142
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                                                            17-JUL-2000; 2000US-00617302.
                                                                                        12-JUN-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            epididymal specific (CRES) protein
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                                                                                                                                                                                                                                                                                                                                                                                                                                     1 QVTDHLEYHLNVEMQWTTCQKP--ETTNCVPQER 32
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  h 47.1%; Score 89; DB 4; Le Similarity 41.2%; Pred. No. 0.00031; 14; Conservative 11; Mismatches 7;
                                                                                                                                                                                                                                                                                                                                                                                                         QITDRMEYQIDVQISRSNCKKPLNNTENCIPQKK 110
                                                                                                                                                                                                                                                                       (first entry)
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99US-0156382P.
                 98US-0109217P.
99US-0156382P.
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                                                                                                                                                                                            spermatogenesis modulator;
CRES; gene therapy;
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                                                                                                                                                                                                                                        protein.
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Matches 14
                                                                                                                                                                                                                                                                            protein which is homologous to mouse testis specific cystatin T (also known as zoya). The cystatin T polynucleotide is useful in gene therapy applications, where it is desired to increase or inhibit cystatin T activity. It is also useful for producing cystatin T polypeptide, as well as for detecting the expression of a cystatin T gene in a biological sample. The cystatin T is useful for modulating spermatogenesis, and may be used to study or modulate that function in in vitro or in vivo systems. In particular, it is also useful for enhancing sperm production, increasing the number of viable sperm in a sample, or enhancing
                                                                                                                                                                                                                             Sequence 142 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                          The present sequence is mouse cystatin-related epididymal specific protein which is homologous to mouse testis specific cystatin T (al
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New polynucleotides encoding testis-specific cystatin-like protein cystatin T, useful in gene therapy for modulating cystatin T activity, particularly for modulating spermatogenesis, or enhancing sperm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Disclosure; Col 47-48; 33pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   production or fertility.
                                                                                                                                                                                                                                                                  fertilisation
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                                                                                                                                                  l Similarity
14; Conserv
                                                                     QVTDHLEYHLNVEMQWTTCQKP--ETTNCVPQER 32
                                                                                                                                                    Conservative
                                                                                                                                                    47.1%; Score 89; DB 4; L
41.2%; Pred. No. 0.00031;
tive 11; Mismatches 7;
                   2004,
                   14:15:00
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Maximum
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Perfect score:
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  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
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1: /cgn2_6/ptodata/2/iaa/5A_COMB.pep:*
2: /cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
3: /cgn2_6/ptodata/2/iaa/6A_COMB.pep:*
4: /cgn2_6/ptodata/2/iaa/6B_COMB.pep:*
5: /cgn2_6/ptodata/2/iaa/DTUS_COMB.pep:*
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US-09-431-480-6
US-09-617-302-6
US-09-241-376-3
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US-09-431-302-4

US-09-431-303-19

US-09-849-303-19

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US-08-849-303-17
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; TYPE: PRT
; ORGANISM: Mus n
US-09-431-480-3
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US-09-617-302-3
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Best Local Similarity
Matches 14; Conserv
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Sequence 10, Appl	Sequence 10, Appl	Sequence 24, Appl	Sequence 16, Appl	Sequence 492, App	Sequence 18, Appl	Sequence 5, Appli	Sequence 5, Appli	Sequence 19, Appl	•	Sequence 20, Appl	Sequence 358, App	Sequence 4, Appli	Sequence 4, Appli	Sequence 7, Appli	Sequence 7, Appli	Sequence 4, Appli	Sequence 10, Appl

ALIGNMENTS

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US-09-431-480-3
US-09-431-480-3
Sequence 3, Application US/09431480
Betent No. 6235708
BEENT NO. 6235708
BEENT NO. 6235708
BEENT NO. 6235708
BEENT SOLOWSY, James L.
APPLICANT: BOLLOWSY, ANDREW
APPLICANT: BOLLOWSY, SANDREW
CURRENT FILING DATE: 1999-11-01
EARLIER PELLING DATE: 1999-11-01
EARLIER PELLING DATE: 1999-09-28
EARLIER FILING DATE: 1999-11-20
EARLIER FILING DATE: 1999-11-20
EARLIER FILING DATE: 1999-11-20
EARLIER FILING DATE: 1999-12-20
EARLIER FILING DATE: 1999-12-20
EARLIER FILING DATE: 1999-12-20

CURRENT FILING DATE: 1999-12-20

OPTOR FILING DATE: 1999-12-20

RESULT 2
US-09-431-480-3

OPTOR FILING DATE: 1999-19-28

EARLIER FILING DATE: 1999-19-28

EARLIER FILING DATE: 1999-19-28

EARLIER FILING DATE: 1999-10-10
PRIOR RIPLING DATE: 1999-11-20

PRIOR FILING DATE: 1999-11-20

PRIOR FILING DATE: 1999-11-20

PRIOR FILING DATE: 1999-12-20

PRIOR FILING DATE: 1999-11-20

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; TYPE: PRT
; ORGANISM: Mus musculus
US-09-617-302-3
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US-09-617-302-4
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Patent No. 6245529
GENERAL INFORMATION:
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TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN T
FILE REFERENCE: 98-72
CURRENT APPLICATION NUMBER: US/09/431,480
CURRENT FILING DATE: 1999-11-01
EARLLER APPLICATION NUMBER: 60/109,217
EARLLER APPLICATION NUMBER: 60/109,217
EARLLER APPLICATION NUMBER: 60/156,382
EARLLER FILING DATE: 1998-11-20
EARLLER APPLICATION NUMBER: 60/156,382
EARLLER FILING DATE: 1999-09-28
NUMBER OF SEQ ID NOS: 22
                                                                                                NUMBER OF SEQ ID NOS:
SOFTWARE: FastSEQ fo
                                                                                                                                                            CURRENT APPLICATION NUMBER: US/09/617,302
CURRENT FILING DATE: 2000-07-17
PRIOR APPLICATION NUMBER: 09/431,480
PRIOR FILING DATE: 1999-11-01
PRIOR APPLICATION NUMBER: 60/109,217
PRIOR APPLICATION NUMBER: 60/156,382
PRIOR APPLICATION NUMBER: 60/156,382
                                                                                                                                          PRIOR FILING DATE:
                                                                                                                                                                                                                                                                                                               APPLICANT: Holloway, James L. APPLICANT: Feldhaus, Andrew TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN FILE REFERENCE: 98-72 C1
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               ORGANISM: Homo sapiens
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Local Similarity 48.5%;
les 16; Conservative
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SEQ ID NO 2
LENGTH: 141
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Best Local Similarity 42.4%;
Matches 14; Conservative
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Best Local
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                                                                                                             Query Match
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CURRENT FILING DATE: 2000-07-17
CURRENT PPLICATION NUMBER: 09/431,480
PRIOR APPLICATION NUMBER: 09/431,480
PRIOR FILING DATE: 1999-11-01
PRIOR APPLICATION NUMBER: 60/109,217
PRIOR FILING DATE: 1998-11-20
PRIOR FILING DATE: 1998-11-20
                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Holloway, James L.
APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN T
FILE REFERENCE: 98-72 C1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EARLIER APPLICATION NUMBER: 60/156,382
EARLIER FILING DATE: 1999-09-28
NUMBER OF SEQ ID NOS: 22
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EARLIER APPLICATION NUMBER: 60/109,217
EARLIER FILING DATE: 1998-11-20
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SOFTWARE: FastSEQ fo
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PRIOR FILING DATE: 1999-09-28
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APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN
FILE REFERENCE: 98-72
                                                                                                                                                                                           LENGTH: 14
TYPE: PRT
                                                                                             Local Similarity
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16; Conserv
                                     1 QVTDHLEYHLNVEMQWTTCQK--PETTNCVPQE 31
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QVTDHLEYHLNVEMQWTTCOK--PETTNCVPQE 31
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                                                                           Conservative
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48.5%;
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Pred. No. 0.0085;
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US-09-886-319A-46; Sequence 46; Application US/09886319A; Patent No. 6586185
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Best Local Similarity
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Patent No. 6680424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Patent No.
                                         APPLICANT: Regembogen, Johannes
APPLICANT: Regembogen, Johannes
APPLICANT: Goppelt, Andreas
TITLE OF INVENTION: Use of Polypeptides or Nucleic Acids for
TITLE OF INVENTION: the Diagnosis or Treatment of Skin Disorders and Wound
TITLE OF INVENTION: Healing and for the Identification of Pharmacologically
TITLE OF INVENTION: Active Substances
FILE REPERENCE: 500125/014002
                                                                                                                                                                                             APPLICANT: Wolf, Eckard
APPLICANT: Werner, Sab
APPLICANT: Halle, Jorn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEX: 133521
INFORMATION FOR SEQ ID NO: 1
SEQUENCE CHARACTERISTICS:
LENGTH: 127 amino acids
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                    CURRENT APPLICATION NUMBER: US/09/886,319A
PRIOR APPLICATION NUMBER: US 60/222,081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
CURRENT APPLICATION DATA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION:
NAME: Jackson Esq., David A.
REGISTRATION NUMBER: 26,742
REFERENCE/DOCKET NUMBER: 1321-1-003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE OF INVENTION: MODIFIED PROTEINASE INHIBITORS NUMBER OF SEQUENCES: 79
CORRESPONDENCE ADDRESS:
ADDRESSEE: Klauber & Jackson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Atkinson, Howard J. APPLICANT: McPherson, Michael J. APPLICANT: Urwin, Peter E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELECOMMUNICATION INFORMATION: TELEPHONE: 201-487-5800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
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TELEPHONE: ZU1-1.
TELEPHONE: ZU1-1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: amino acid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STREET:
                                                                                                                                                                                                                                                                                                                                                                                                      62 OLVAGINYYLDVEMGRTTCTKSQTNLTNC 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14;
                                                                                                                                                                                                                                                                                                                                                                                                                           1 QVTDHLEYHLNVEMQWTTCQKPET--TNC 27
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                                                                                                                                                                                             Werner, Sabine
Halle, Jorn-Peter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Application US/08849303
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; ORGANISM: Mus
US-09-886-319A-46
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                                                                                                                  ; Patent No. 6680424;
; GENERAL INFORMATION:
; APPLICANT: Atkinson
; APPLICANT: McPherso
; APPLICANT: Urwin, P
                                                                                                                                                                                                                                          US-08-849-303-26
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SEQ ID NO 48
LENGTH: 140
TYPE: PRT
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PRIOR APPLICATION NUMBER: DE 10030149.5
PRIOR FILING DATE: 2000-06-20
NUMBER OF SEQ ID NOS: 84
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 46
                                                                                                                                                                                                                   Sequence 26,
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Best Local Similarity
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APPLICANT: Werner, Sabine
APPLICANT: Halle, Jorn-Peter
APPLICANT: Regenbogen, Johannes
APPLICANT: Regenbogen, Johannes
APPLICANT: Goppelt, Andreas
TITLE OF INVENTION: Use of Polypeptides or Nucleic Acids for
TITLE OF INVENTION: the Diagnosis or Treatment of Skin Disorders and Wound
TITLE OF INVENTION: Healing and for the Identification of Pharmacologically
TITLE OF INVENTION: Active Substances
FILE REFERENCE: 50125/014002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION NUMBER: US/09/886,319A CURRENT FILING DATE: 2001-06-20 PRIOR APPLICATION NUMBER: US 60/222,081 PRIOR FILING DATE: 2000-08-01 PRIOR APPLICATION NUMBER: DE 10030149.5 PRIOR FILING DATE: 2000-06-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQ ID NOS: 84
                                       APPLICANT: McPherson, Michael J.
APPLICANT: Urwin, Peter E.
TITLE OF INVENTION: MODIFIED PROTEINASE INHIBITORS
NUMBER OF SEQUENCES: 79
CORRESPONDENCE ADDRESS:
ADDRESSEE: Klauber & Jackson
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                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
les 13; Conserv
                  STREET:
                                     ADDRESSEE:
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Hackensack
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                                                                                                                                                                                                                     Application US/08849303
                  411 Hackensack Avenue, 4th Floor
                                                                                                                                                           Atkinson, Howard J.
                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
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Pred. No. 0.95;
5; Mismatches
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; SOFTWARE: PatentIn Ver.
; SEQ ID NO 2
; LENGTH: 120
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-775-932-2
                                      RESULT 12
5432264-4
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US-09-775-932-2
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;Patent No. 5432264; APPLICANT: GRUBB, ANDERS;LUNDWALL, AKE;ABRAHAMSON, MAGNUS;
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Patent No. 6534477
GENERAL INFORMATION:
                                                                                                                                                                                                         Query Match
Best Local S
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Best Local Similarity 33.3
Matches 14; Conservative
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PRIOR FILING DATE: 1998-08-05
NUMBER OF SEQ ID NOS: 32
                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION NUMBER: US/09/775,932
CURRENT FILING DATE: 2001-02-02
CRICA APPLICATION NUMBER: CA99/00717
PRIOR FILING DATE: 1999-08-05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION: 58
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION:
NAME: Jackson E92, David A.
REGISTRATION NUMBER: 26,742
REFERENCE/DOCKET NUMBER: 1321-1-003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELECOMMUNICATION INFORMATION:
TELEPHONE: 201-487-5800
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                                                                                                                                                                                        / Match 28.6%;
Local Similarity 41.4%;
les 12; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QVVSGVKYYLMMELLKTTCKKTVGRPKGYQEIQNCNLPPENQ 88
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              University of British Columbia
VENTION: Production and use of Modified Cystatins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             111 amino acids
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33.3%;
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                                                                                                                                                                                      Score 54; DB 4; Length 120; Pred. No. 1.6; 4; Mismatches 11; Indels
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Query Match
Best Local Similarity
Watches 12; Conserve
                                                         ; TOPOLOGY: linear; MOLECULE TYPE: peptide US-08-832-535-11
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TITLE OF INTUINION: RECOMBINANT 3-DES-OH-CYSTATIN C PRODUCED;
BY EXPRESSION IN A PROCARYOTIC HOST CELL
NUMBER OF SEQUENCES: 8
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-832-535-11
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Matches
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           Query Match
Best Local Similarity
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                                                                                                                                                                           TELEFAX: (;
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APPLICANT: NI, JI
APPLICANT: LI, HA
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FILING DATE: 13-AUG-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 440,221
FILING DATE: 21-NOV-1989
                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
CURRENT APPLICATION DATA;
                                                                                                                                                         TELEFAX: (201) 994-1744
VEORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
NAME: KIMBALL, PAUL C.
REGISTRATION NUMBER: 34,6
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES: HUMAN CYSTATIN F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                     TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: US/08/832,535
FILING DATE: 03-APR-1997
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 120
                                                                                                      STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET: 9410 KEY CITY: ROCKVILLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: 297,198
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ZIP: 20850
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amino acid
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              28.6%;
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Pred. No. 1.6;
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             Score 54; DB 2;
Pred. No. 1.9;
 Mismatches
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                               Length 145;
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Patent No. 5935817
GENERAL INFORMATION:
APPLICANT: Bandman, Olga
APPLICANT: Goli, Surya K.
                                                                                                                                                  Sequence 3, Application US/08744138 Patent No. 6011012
                                                                                                                                                                                                                                                                                                                           Matches
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Best Local S
                                                                                                GENERAL INFORMATION:
APPLICANT: Gentz, Reiner L.
APPLICANT: Ni, Jian
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INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE:
ATTORNEY/AGENT INFORMATION:
NAME: Billings, Lucy J.
NAME: Billings, Lucy J.
REGISTRATION NUMBER: 36,749
REFERENCE/DOCKET NUMBER: PF-0
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: amino acid
STRANDEDNESS: sing
TOPOLOGY: linear
IMMEDIATE SOURCE:
                                              APPLICANT: Rosen, Craig A.
APPLICANT: Yu, Guo-Liang
ATTLE OF INVENTION: Human Cystatin E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
LENGTH: 146 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US/08/79
FILING DATE: Filed Herewith
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES: 4
CORRESPONDENCE ADDRESS:
ADDRESSE: Incyte Pharmaceuticals, Inc.
                 CORRESPONDENCE ADDRESS:
                                 NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: NOVEL HUMAN CYSTATIN-LIKE TITLE OF INVENTION: PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET: 3174 POI
CITY: Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                           LIBRARY: GenB
CLONE: 181387
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY: UZIP: 94304
 ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE:
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Human Genome Sciences, Inc.
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Pred. No. 2;
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US-08-744-138-3
                                                               Best Local Similarity Matches 12; Conserv
                                                                                               Query Match
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INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 146 amino acids
                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION: 435
ATTORNEY/AGENT INFORWATION:
NAME: Brookes, A. Anders
REGISTRATION NUMBER: 36,37
REFERENCE/DOCKET NUMBER: F
                                                                                                                                    HYPOTHETICAL: NO
ORIGINAL SOURCE:
INDIVIDUAL ISOLATE: Cystatin C
                                                                                                                                                                                           MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM PC compatible
ODERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/744,138
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ZIP: 20850
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                            TELEPHONE: 301 309 8504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STATE: M
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                                                                                                                                                                                                                                              TYPE: amino acid
                                                                                                                                                                                                            TOPOLOGY:
                                                                                                                                                                                                                          STRANDEDNESS:
                              1 QVTDHLEYHLNVEMQWTTCQK--PETTNC 27
QIVAGVNYFLDVELGRTTCTKTQPNLDNC
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                                                             Conservative
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Search completed: March 18, 2004, 14:25:37 Job time : 9.44643 secs

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Maximum Match 100%
Listing first 45 summaries
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Maximum DB
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Match
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427.913 Million cell updates/sec
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1: /cgn2_6/ptodata/2/pubpaa/US07_PUBCOMB.pep:*
2: /cgn2_6/ptodata/2/pubpaa/PCT_NEW_PUB.pep:*
3: /cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep:*
4: /cgn2_6/ptodata/2/pubpaa/US06_PUBCOMB.pep:*
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6: /cgn2_6/ptodata/2/pubpaa/PCTUS_PUBCOMB.pep:*
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                                                                                                                                                                                                                                                                                                                                                                                                  /cgn2_6/ptodata/2/pubpaa/US09Ā_PUBCOMB.pep:*
/cgn2_6/ptodata/2/pubpaa/US09B_PUBCOMB.pep:*
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/cgn2_6/ptodata/2/pubpaa/US10Ā_PUBCOMB.pep:*
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US-09-941-314-14
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US-09-941-314-3
US-09-941-314-3
US-09-941-314-2
US-09-941-314-10
US-09-941-314-11
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Sequence 12, Appl
Sequence 16, Appl
Sequence 15, Appl
Sequence 3, Appli
Sequence 4, Appli
Sequence 2, Appli
Sequence 10, Appli
Sequence 10, Appl
Sequence 11, Appl
Sequence 11, Appl
Sequence 11, Appl
Sequence 114, Appl
Sequence 17, Appl
Sequence 17, Appl
Sequence 184, Appl
Sequence 184, Appl
Sequence 184, Appl
Sequence 184, Appl
Sequence 194, Appl
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                                                                                                                 RESULT 2
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Best Local S
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63	·	145	ø	9-740-638-2	2,
63	ü	145	13	US-10-006-467-2	Sequence 2, Appl:
63	ü	145	14	10-235-148-	<u>ب</u>
63	ω.	145	14	10-168-425-	7
63	ω.	165	9	09-740-63	5, 2
63	'n	165	13	-006-467	е 5
63	33.3	165	14	-10-235-148-	σ `
56	9	140	14	-10-376-564-	
56	٥	140	14	-564-4	48,
55.5	9	633	10	-09-991	2
55.5	9	633	14	-10-298-974-	Ņ
54.5		111	œ	8-849-30	Sequence 26, Appl
54	<u>Ф</u>	120	9		2, /
54	8	146	œ	-08-849-303-	17,
54	8	146	9	-09-940-497-	ω
54	8	146	9	6	
54	8	146	14	US-10-329-428-3	e u
54	8	146	14	US-10-376-564-47	e 47,
53	28.0	122	9	9-7	10,
53	8	142	œ	US-08-849-303-20	20
53	8	142	9	US-09-940-497-4	4
53		142	12	US-10-262-839-132	Sequence 132, App
53	8	604	9	US-09-820-809-13	Sequence 13, Appl
53		983	14	US-10-255-149-2	m
52	.7	140	œ	US-08-849-303-18	Sequence 18, App
51.5	.7	678	12	US-10-282-122A-61129	Sequence 61129, A
51	7.	447	12	10-424-599-	Sequence 191984
50	٠	109	14	US-10-029-386-30645	Sequence 30645,
50	26.5	112	œ	08-849-303-1	щ
50		118	9	US-09-775-932-24	24,

ALIGNMENTS

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GENERAL INFORMATION:

GENERAL INFORMATION:

APPLICANT: ZymoGenetics, Inc.

TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to

TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein

FILS REFERENCE: 00-81PC

CURRENT APPLICATION NUMBER: US/09/941,314

CURRENT FILING DATE: 2001-08-29

PRIOR APPLICATION NUMBER: 60/230,230

PRIOR FILING DATE: 2001-09-01

NUMBER OF SEQ ID NOS: 19

SOPTWARE: FastSEQ for Windows Version 4.0

SEQ ID NO 12

LENGTH: 33
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; Sequence 12, Application US/09941314
; Patent No. US20020142396A1
Sequence 14, Application US/09941314

Ratent No. US20020142396A1

GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its
TITLE OF INVENTION: Inhibit Cancer Procoagulant
                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM: Homo sapiens
-09-941-314-12
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100.0%; Pred. No. 1e-18;
vative 0; Mismatches
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    Protein
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FILE REFERENCE: 00-81PC

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CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION UNMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 14
LENGTH: 52
TYPE: PAT
ORGANISM: Homo sapiens
US-09-941-314-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 16
LENGTH: 59
TYPE: PRT
                                                                                                           Sequence 15, Application US/09941314

Patent No. US20020142396A1

GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use
TITLE OF INVENTION: MUMBER: US/09/941,314

CURRENT APPLICATION NUMBER: 60/230,230

PRIOR APPLICATION NUMBER: 60/230,230

PRIOR FILING DATE: 2001-09-01

NUMBER OF SEQ ID NOS: 19

SOFTWARE: FastSEQ for Windows Version 4.0
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US-09-941-314-15
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US-09-941-314-16
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                                                                    SEQ ID NO 15
LENGTH: 80
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APPLICANT: ZymoGenetics, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 16, Application US/09941314 Patent No. US20020142396A1
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                     ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              / Match 100.0%; Score 189; DB 9; Local Similarity 100.0%; Pred. No. 1.9e-18; nes 33; Conservative 0; Mismatches 0;
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Sequence 4, Application US/09941314

Patent No. US20020142396A1

GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
FILE REFERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
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RESULT 7
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APPLICANT: ZYMOGENETICS, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its
TITLE OF INVENTION: Inhabit Cancer Procoagulant
FILE REFERENCE: 00-81PC
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
PRIOR FILING DATE: 2001-09-01
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SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 3
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Patent No. US20020142396A1
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Best Local Similarity
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Best Local
                                                                                                                                    Best Local Similarity
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TYPE: PRT
ORGANISM: Homo
                                                                                                                                                                                                   LENGTH: 117
TYPE: PRT
ORGANISM: Homo mapiens
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                                                                  1 QVTDHLEYHLNVEMQWTTCQKPETTNCVPQERE 33
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Pred. No. 2.7e-18;
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US-09-941-314-2

Sequence 2, Application US/09941314 Patent No. US20020142396A1

GENERAL INFORMATION

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Sequence 10, Application US/09941314

Patent No. US20020142396A1

GENERAL INPORMATION:
APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammallan Cystatin-8 and Its Use to TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein FILE REFERENCE: 00-81PC
CURRENT APPLICATION UNMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTMARE: FastSEQ for Windows Version 4.0

SEQ ID NO 10
                                                       Sequence 13, Application US/09941314

Patent No. US20020142396A1

GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to FILE REFERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314

CURRENT FILING DATE: 2001-08-29

PRIOR APPLICATION NUMBER: 60/230,230

PRIOR APPLICATION NUMBER: 60/230,230

PRIOR FILING DATE: 2001-09-01

NUMBER OF SEQ ID NOS: 19
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US-09-941-314-10
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US-09-941-314-13
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SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 2
LENGTH: 137
SOPTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 13
LENGTH: 49
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Best Local
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Best Local Similarity
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TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to TITLE OF INVENTION: Inhibit Cancer Procoagulant Proteir PILE REFERENCE: 00-81PC (URRENT APPLICATION NUMBER: US/09/941,314 (URRENT FILING DATE: 2001-08-29 PRIOR APPLICATION NUMBER: 60/230,230 PRIOR FILING DATE: 2001-09-01
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33; Conservative
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GENERAL INFORMATION:

APPLICANT: ZymoGenetics, Inc.

TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to

TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein

FILE REFERENCE: 00-81PC

CURRENT APPLICATION NUMBER: US/09/941,314

CURRENT FILING DATE: 2001-08-29

PRIOR APPLICATION NUMBER: 60/230,230

PRIOR FILING DATE: 2001-09-01

NUMBER OF SEQ ID NOS: 19

SOFTWARE: FastSEQ for Windows Version 4.0

SEQ ID NO 11

LENGTH: 24
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; ORGANISM: Homo sapiens
US-09-941-314-13
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                                                                                                                                                ; LENGTH: 48
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-941-314-17
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US-09-941-314-11
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Patent No. US20020142396A1
GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
FILE REFERENCE: 00-81PC
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Patent No. US20020142396A1
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SOFTWARE: FastSEQ for Windows Version
SEQ ID NO 17
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Best Local Similarity
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Best Local Similarity
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CURRENT FILLING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILLING DATE: 2001-09-01
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les 23; Conservative
                        11 NVEMQWTTCQKPETTNCVPQERE 33
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NVEMOWTTCQKPETTNCVPQERE 23
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                                                                                        70.4%; Score 133; DB 9; 100.0%; Pred. No. 7.1e-11
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US-09-864-761-40986
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US-10-239-663-37
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US-09-893-737-164
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Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Agarwal, Pankaj
APPLICANT: Murdoch, Paul
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10-239-663-37
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CURRENT FILING DATE: 2001-06-28
PRIOR APPLICATION NUMBER: US 60/215,446
PRIOR FILING DATE: 2000-06-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Sheppard, Paul O.
APPLICANT: Presnell, Scott R.
TITLE OF INVENTION: MAMMALIAN SECRETED PROTEINS
                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION NUMBER: 60/200,166
PRIOR FILING DATE: 2000-04-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILE REFERENCE: GP50018
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ublication No.
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SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CURRENT FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT APPLICATION NUMBER: US/10/239,663
                                                                                                                                                                                                                                                               TYPE: PRT
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TYPE: PRT
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                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: 60/192,668 FILING DATE: 2000-03-27
                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: 60/192,158 FILING DATE: 2000-03-24
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APPLICATION NUMBER: PCT/US01/09226
                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: 2001-03-22
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INVENTION: NOVEL COMPOUNDS
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                                                                                                                    1 OVIDHLEYHLNVEMOWITCOK-PETINCVPOE 31
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Rizvi, Safia, K.
Smith, Randall, F.
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Pred. No. 0.15;
6; Mismatches 10;
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SOFTWARE: Annomax Sequence Listing Engine vers.
SEQ ID NO 40986
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                                           Matches
                                                              Query Match
Best Local
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CURRENT FILING DATE: 2001-05-23
PRIOR APPLICATION NUMBER: US 60/180,312
PRIOR FILING DATE: 2000-02-04
PRIOR APPLICATION NUMBER: US 60/207,456
PRIOR FILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: US 09/632,366
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APPLICANT: Chen, Wensheng
TITLE OF INVENTION: HUMAN GENOME-DERIVED SINGLE EXON NUCLEIC ACID
TITLE OF INVENTION: GENE EXPRESSION ANALYSIS BY MICROARRAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR FILING DATE:
                                                                                                                                                                                                                    OTHER INFORMATION: MAP TO AL121894.14
OTHER INFORMATION: EXPRESSED IN LING, SIGNAL = 1.5
OTHER INFORMATION: EXPRESSED IN ADULT LIVER, SIGNAL = 1.5
OTHER INFORMATION: EXPRESSED IN HEART, SIGNAL = 1.5
OTHER INFORMATION: EXPRESSED IN BRAIN, SIGNAL = 1.5
OTHER INFORMATION: EXPRESSED IN PLACENTA, SIGNAL = 1.5
                                                                                                                                                                                                                                                                                                                                                           TYPE: PRT
ORGANISM: Homo
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                                         l Similarity
15; Conserv
VTDHLEYHLNVEMQWTTCQK-PETTNCVPQE 31
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                                           Conservative
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                                                          Score 67.5; DB Pred. No. 0.05;
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BONE MARROW, SIGNAL = 1.5
                                           Mismatches
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RESULT 15
US-08-843-03-19
J Sequence 19, Application US/08849303
Publication No. USZ0030221209A1

APPLICAWT: McKinson, Howard J.
APPLICAWT: McKinson, Howard J.
APPLICAWT: McKinson, Michael J.
APPLICAWT: Michael J
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Result
No.
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Maximum Match 100%
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Gapext 0.5
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T28369
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1 QVTDHLEYHLNVEMQWTTCQKPET--TNC 27

Query Ma Best Loc Matches	RESULT 2 S10587 Cystatin C - rat C,Species: Rattus sp. C,Date: 21-Nov-1993 # C,Accession: S10587 R;Esnard, F; Esnard, Biol. Chem. Hoppe-Sey A;Title: Rat cystatin A;Reference number: S A;Accession: S10587 A;Accession: S10587 A;Accession: S10587 A;Accession: S10587 A;Residues: 1-120 <es 43-asn="" a;note:="" al="" al<="" td="" was=""><td>Query M Best Lo Matches Qy</td><td>RESULT 1 A45361 Cystatin- C;Species C;Date: 1 C;Accessi R;Cornwal Mol. Endc A;Title: A;Referen A;Referen A;Residue A;Cross-r A;Note: 8 A;Note: 6 C;Superfa</td><td></td><td>00000000000000000000000000000000000000</td></es>	Query M Best Lo Matches Qy	RESULT 1 A45361 Cystatin- C;Species C;Date: 1 C;Accessi R;Cornwal Mol. Endc A;Title: A;Referen A;Referen A;Residue A;Cross-r A;Note: 8 A;Note: 6 C;Superfa		00000000000000000000000000000000000000
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34.4%; milarity 48.3%; Conservative	BSULT 2 10587 10587 ystatin C - rat 'Species: Rattus sp. (rat) pate: 21-Nov-1993 #sequence_revi pate: 21-Noppe-Seyler 371 (Suppl pat	A7.1%; Similarity 41.2%; 14; Conservative 1 1 QVTDHLEYHLNVEMQWTTC	d epidid 1993 #se 1993 #se 5361 5361 i.; Orgeb i.; Orgeb is gene: Ber: A45 minary; minary; minuclei 39 <cor> cees: GB: cees: GB: cees: GB: cystatin cystatin</cor>		22222222222222222222222222222222222222
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	revisiner, Domplet. ID:903 ID:903 Grid horogy <coopy <coop<="" <coopy="" td=""><td>%; Sc %; Pr 11; TTCQKP : : SNCKKP</td><td>ecific mouse revisi t, M.C t, M.C to 1930 Une tes Une</td><td></td><td>1 A8BYD 2 T47940 2 T47940 2 T49362 2 B75129 2 G69229 2 G8922 2 T19078 2 E84950 2 E839953 2 T47725 2 T30342 2 T30342 2 JC6012 2 JC6012 2 JC6012 2 JC6012</td></coopy>	%; Sc %; Pr 11; TTCQKP : : SNCKKP	ecific mouse revisi t, M.C t, M.C to 1930 Une tes Une		1 A8BYD 2 T47940 2 T47940 2 T49362 2 B75129 2 G69229 2 G8922 2 T19078 2 E84950 2 E839953 2 T47725 2 T30342 2 T30342 2 JC6012 2 JC6012 2 JC6012 2 JC6012
Score 65; DB 2, Pred. No. 0.098, 5; Mismatches	RESULT 2 \$10587 CyBcatin C - rat C;Species: Rattus sp. (rat) C;Date: 21-Nov-1993 #sequence_revision 03-Nov-1995 #text_chan C;Dates: 21-Nov-1993 #sequence_revision 03-Nov-1995 #text_chan C;Dates: 21-Nov-1993 #sequence, D.; Capony, J.P.; Derancou C;Accession: \$10587 R;Esnard, F.; Esnard, A.; Faucher, D.; Capony, J.P.; Derancou Biol. Chem. Hoppe-Seyler 371[Suppl.), 161-166, 1990 A;Title: Rat cystatin C: the complete amino acid sequence rev A;Reference number: \$10587; MUID:90380276; PMID:2400577 A;Reference number: \$10587; MUID:90380276; PMID:2400577 A;Recession: \$10587 A;Recule type: protein A;Residues: 1-120 <esn> A;Note: the sequence from Fig. 2 is inconsistent with that fr C;Superfamily: cystatin homology <cys></cys></esn>	47.1%; Score 89; DB 2; imilarity 41.2%; Pred. No. 6.1e-0; Conservative 11; Mismatches QVTDHLEYHLAVEMQWTTCQKPETTNCVPQER 3 : : :: : : : :: QITDRMEYQIDVQISRSNCKKPLANTENCIPQKK 1	RESULT 1 A45361 Cystatin-related epididymal specific protein - mouse (fragment) C;Species: Mus musculus (house mouse) C;Date: 10-Jun-1993 #sequence_revision 18-Nov-1994 #text_change 05- C;Accession: A45361 R;Cornwall, G.A.; Orgebin-Crist, M.C.; Hann, S.R. Mol. Endocrinol. 6, 1653-1664, 1992 A;Title: The CRES gene: a unique testis-regulated gene related to the companient of the companie	ALIGNMENTS	3913 940 940 940 9522 960 97725 960 965 965 965 965 965 965 965 965 965 965
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C;Species: (C;Date: 15-(C;Accession R;White, S.
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C;Speciaes: Rattus norvegicus (Norway rat)
C;Date: 01-Dec-1993 #sequence_revision 03-Aug-1995 #text_change 16-Jul-1999
C;Accession: $07085; $01337; $21109
R;Cole, T.; Dickson, P.W.; Esnard, F.; Averill, S.; Risbridger, G.P.; Gauthier,
Eur. J. Biochem. 186, 35-42, 1989
                                                                                                                            A; Reference number: Z20029
A; Accession: T25403
A; Status: preliminary; tran
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A; Residues: 1-1779 <WIL>
A; Crose-references: EMBL. AL021066; PIDN: CAAL5925.1;
A; Experimental source: clone H31B20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Molecule type: protein
A;Residues: 8-49 <ESN>
A;Residues: 8-70 <ESN>
R;Esnard, A; Esnard, F; Guillou, F; Gauthier, F.
FEBS Lett. 300, 131-135, 1992
A;Title: Production of the cysteine proteinase inhibitor cystatin C by rat Sertoli A;Reference number: S21109; MUID:922225121; PMID:1563513
A;Accession: S21109
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A;Title: Two rat homologues of human cystatin C.
A;Reference number: S01337; MUID:88313020; PMID:3044831
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A;Accession: S07085
                                                   A; Molecule type: DNA
A; Residues: 1-1779 <WI2>
A; Cross-references: EMBL: Z81133;
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A; Experimental source: C; Genetics:
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A; Residues: 1-127 <COL>
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;Residues: 8,'XX',11-20 <ES2>
;Superfamily: cystatin; cystatin homology;Keywords: cysteine proteinase inhibitor;16-127/Domain: cystatin homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;Species: Caenorhabditis elegans
;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 15-Sep-2000
;Accession: T23130; T25403
                                                                                                                      Status: preliminary; translated from GB/EMBL/DDBJ
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                                                PIDN:CAB03445.1; GSPDB:GN00019; CESP:T28B8.4
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QVVSGVKYYLMMELLKTTCKKTVGRPKGYQEIQNCNLPPENQ

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C;Species: Bitis arietans (puff adder)
C;Date: 15-Dec-1988 #sequence_revision
C;Accession: A28793
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A;Residues: 1-4540 «KAN»
A;Residues: 1-4540 «KAN»
A;Residues: D.J.; Beckwith, S.M.; Kandl, K.A.; Keating, H.H.; Tjandra, H.; Forr
J. Cell Sci. 107, 839-847, 1994
A;Title: The dynein genes of Paramecium tetraurelia: Sequences adjacent to
A;Reference number: PC4340; MUID:94334383; PMID:8058840
A;Accession: PC4341
                                                                                                                                                          R;Ritonja, A.; Evans, H.J.; Machleidt, W.; Barrett, A.J. Biochem. J. 246, 799-802, 1987
A;Title: Amino acid sequence of a cystatin from venom of A;Reference number: A28793; MUID:88076861; PMID:3500714
A;Accession: A28793
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A;Introns: 57/3
C;Superfamily: dynei
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A;Introns: 161/2; 223/2; 309/3; 332/2; 547/3; 603/1; 657/3; 745/2;
C;Superfamily: Caenorhabditis elegans hypothetical protein T28B8.3
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                                                                                                         C; Superfamily: cystatin;
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A; Residues: 1831-2029
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                                                                                                                           A;Molecule type: protein
A;Residues: 1-111 <RIT>
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Best Local :
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l Similarity 34.2%;
l3; Conservative
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13; Conserv
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                                                      28.8%;
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Pred. No. 2.1;
8; Mismatches
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Pred. No. 94;
5; Mismatches
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Pred. No. 2.
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R;Saitoh, E.; Sabatini, L.M.; Eddy, R.L.; Shows, T.B.; Azen, E.A.; Isemura, S.; Sanada, Biochem. Biophys. Res. Commun. 162, 1324-1331, 1989

A;Title: The human cystatin C gene (CST3) is a member of the cystatin gene family which A;Reference number: A33400

A;Molecule type: DNA

A;Residues: 1-24, 'T', 26-146 <SAIS

A;Cross-references: GB:M27889; GB:M27890; GB:M27891; NID:g181385; PIDN:AAA52164.1; PID:g

R;Ghiso, J.; Cowan, N.; Frangione, B.

Biol. Chem. Hoppe-Seyler 369, 205-208, 1988

A;Title: Isolation of a sequence encoding human cystatin C. Conservation of exon-intron A;Reference number: 502751; MUID:89076507; PMID:3264504

A;Residues: 82-119 <GH2>

A;Cross-references: EMBL:M27769

A;Cross-references: EMBL:M27769

A;Cross-references: EMBL:M27769

A;Grubb, A.; Lofberg, H.

R;Grubb, A.; Lofberg, H.

R;Grubb, A.; Lofberg, H.

R;Grubb, A.; Lofberg, H.

R;Reference number: A01270; MUID:82222268; PMID:6283552

A;Mccession: A01270

A.MClession: A01270
                                                                                                              A;Molecule type: protein
A;Residues: 27-131,'S', 133-146 <GRU>
A;Residues: 27-131,'S', 133-146 <GRU>
R;Ghiso, U, Jensson, O.; Frangione, B.
Proc. Natl. Acad. Sci. U.S.A. 83, 2974-2978, 1986
Proc. Natl. Acad. Sci. U.S.A. 83, 2974-2978, 1986
A;Title: Amyloid fibrils in hereditary cerebral hemorrho
A;Title: Amyloid fibrils in hereditary cerebral hemorrho
A;Reference number: A25434; MUID:86206076; PMID:3517880
A;Accession: A25434
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R;Levy, E.; Lopez-Otin, C.; Ghiso, J.; Geltner, D.; Frangione, B.
J. Exp. Med. 169, 1771-1778, 1989
A;Title: Stroke in Icelandic patients with hereditary amyloid angiopathy is related A;Reference number: JL0095; MUID:89235594; PMID:2541223
A;Accession: JL0095
A;Moccule type: DNA
A;Residues: 1-146 <LEV'
A;Cross-references: GB:X61681; NID:g30367; PIDN:CAA43856.2; PID:g4490944
A;Note: the cystatin C gene isolated from the brain of an Icelandic patient with her
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C;Date: 06-Jul-1992 #sequence revision 31-Mar-1991 #text change 08-Dec-2000
C;Accession: S10216; S00004; JL0095; A33400; S02751; A01270; A25434; S12288; A32732; JR;Abrahamson, M.; Olafsson, I.; Palsdottir, A.; Ulvsbaeck, M.; Lundwall, A.; Jensson, Biochem. J. 268, 287-294, 1990
A;Residues: 27-73 <TUR>
R;Brzin, J.; Popovic, T.; Turk, V.
Biochem. Biophys. Res. Commun. 118,
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A;Molecule type: mRNA
A;Residues: 1-146 <AB2>
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A; Title: Structure and expression of the human cystatin C gene A; Reference number: S10216; MUID:90303202; PMID:2363674
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A; Residues: 1-146 < AB1>
                                                                                                           A; Molecule type: protein
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   103-109, 1984
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A;Molecule type: protein
A;Rolecule type: protein
A;Rolecule type: protein
A;Rolecule type: protein
A;Rolecule this protein, purified from cerebrospinal fluid of patients with the autosomal A;Note: this protein, purified from csf but is found instead in amyloid deposits edefective gene is not present in Csf but is found instead in amyloid deposits R;Popovic, T.; Brzin, J.; Ritonja, A.; Turk, V.
Biol. Chem. Hoppe-Seyler 371, 575-580, 1990
A;Title: Different forms of human cystatin C.
A;Reference number: S10607; MUID:91025625; PMID:2222856
A;Accession: S10607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               F;1-26/Domain: signal sequence #status predicted <SIG>F;27-146/Product: cystatin C #status experimental <MAT>F;35-146/Domain: cystatin homology <CYS>F;81-85/Region: inhibitory #status predicted F;29/Modified site: hydroxyproline (Pro) (partial) #status F;99-109,123-143/Disulfide bonds: #status experimental
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A;Map position: 20p11.2-20p11.2
A;Introns: 81/3; 119/3
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A,Molecule type: protein
A,Residues: 27-49;106-146 <BER>
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A;Contents: annotation; disulfide bonds
R;Berti, P.J.; Storer, A.C.
Biochem. J. 302, 411-416, 1994
A;Title: Local pH-dependent conformational changes leading
A;Reference number: S55305; MUID:94379969; PMID:8092991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Experimental source: urine, kidney disease A;Note: truncated forms with amino ends at positions R;Grubb, A.; Lofberg, H.; Barrett, A.J. FEBS Lett. 170, 370-374, 1984
A;Title: The disulphide bridges of human cystatin C
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R;Olafsson, I.; Gudmundsson, G.; Abrahamson, M.; Jensson, O Scand. J. Clin. Lab. Invest. 50, 85-93, 1990
A;Title: The amino terminal portion of cerebrospinal fluid A;Reference number: A60552; MUID:90193615; PMID:2315647
A;Accession: A60552
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Chin, C.W.; Chung, M.K.; Conn, ansen, N.F.; Hughes, B.; Huizar, Nature 408, 816-820, 2000
                                                                                                                                hypothetical protein T2J15.11 [imported] - Arabidopsis thaliana C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change
                                                                             R; Theologis, A.; Ecker, J.R.; Palm,
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                                                                                                   C;Accession: B96520
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Comment: This protein is an inhibitor of cysteine proteinases and my Comment: A mutant cystatin C, with 94-Gln, is deposited in heredita
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Best Local
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Pred. No. 3.
                                                   C.J.; Federspiel, N.A.; Kaul, S.; White, O.; Alonso, Conway, A.B.; Conway, A.R.; Creasy, T.H.; Dewar, K.;
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A;Authors: Hunter, J.L.; Jenkins, J.; Johnson-Hopson, C.; Khan, S.; Khaykin, E.; Kim, C.C.A.; Li, J.H.; Li, Y.; Lin, X.; Liu, S.X.; Liu, Z.A.; Luros, J.S.; Maiti, R.; Marziali, Rizzo, M.; Rooney, T.; Rowley, D.; Sakano, H.
A;Authors: Salzberg, S.L.; Schwartz, J.R.; Shinn, P.; Southwick, A.M.; Sun, H.; Tallon, Rer, M.; Wu, D.; Yu, G.; Fraser, C.M.; Venter, J.C.; Davis, R.W.
A;Title: Sequence and analysis of chromosome 1 of the plant Arabidopsis.
A;Reference number: A86141; MUID:21016719; pMID:11130712
C;Species: Homo sapiens (man)
C;Date: 03-May-1994 #sequence revision 03-May-1994 #text_change 16-Jul-1999
C;Accession: A47142; SIS212
R;Freije, J.P.; Balbin, M.; Abrahamson, M.; Velasco, G.; Dalboge, H.; Grubb, J. Biol. Chem. 268, 15737-15744, 1993
A;Title: Human cystatin D. CDNA Cloning, characterization of the Escherichia A;Reference number: A47142; MUID:93340179; PMID:8340398
A;Accession: A47142
A;Status: preliminary
A;Molecule type: mRNA
A;Accessidues: 1-142 <FRE>
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R;Theologis, A.; Ecker, J.R.; Palm, C.J.; Federspiel, N.A.; Kaul, S.; White, O.; Alonso, Chin, C.W.; Chung, M.K.; Conn, L.; Conway, A.B.; Conway, A.R.; Creasy, T.H.; Dewar, K.; ansen, N.F.; Hughes, B.; Huizar, L.

Nature 408, 816-820, 2000
A;Authors: Hunter, J.L.; Jenkins, J.; Johnson-Hopson, C.; Khan, S.; Khaykin, E.; Kim, C. C.A.; Li, J.H.; Li, Y.; Lin, X.; Liu, S.X.; Liu, Z.A.; Luros, J.S.; Maiti, R.; Marziali, Rizzo, M.; Rooney, T.; Rowley, D.; Sakano, H.

R;Authors: Salzberg, S.L.; Schwartz, J.R.; Shinn, P.; Southwick, A.M.; Sun, H.; Tallon, ker, M.; Wu, D.; Yu, G.; Fraser, C.M.; Venter, J.C.; Davis, R.W.

A;Title: Sequence and analysis of chromosome 1 of the plant Arabidopsis.

A;Reference number: A86141; MUID:21016719; PMID:11130712
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C;Genetics:
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C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 31-Dec-2001
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C;Genetics:
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A; Residues: 1-302 <STO>
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C.Superfamily: metabotropic glutamate receptor 4
C.Superfamily: metabotropic glutamate receptor; glycoprotein; neurotransmitter receptor; phosphog protein-coupled receptor; glycoprotein; neurotransmitter receptor; phosphog protein-coupled receptor 4 #status predicted <SIG>
F.33-912/Product: metabotropic glutamate receptor 4 #status predicted <TRI>
F.588-610/Domain: transmembrane #status predicted <TII>
F.655-645/Domain: transmembrane #status predicted <III>
F.700-720/Domain: transmembrane #status predicted <IIV>
F.751-772/Domain: transmembrane #status predicted <TRV>
F.751-772/Domain: transmembrane #status predicted <TRV>
F.786-807/Domain: transmembrane #status predicted <VII>
F.780-807/Domain: transmembrane #status predicted <VII-
F.782-847/Domain: transmembrane #status predicted <FII-
F.782-847/Domain: transmembrane #status predicted <FII-
F.782-847/Domain: transmembrane #status predicted <FII-
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A;Ritle: Structure and expression of the gene encoding cystatin D, a novel A;Reference number: S18212; MUID:92041895; PMID:1939105
A;Accession: S18212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Molecule type: mRNA
A;Residues: 1-123,'R',125-912 <RES>
A;Residues: 1-123,'R',125-912 <RES>
A;Cross-references: GB:M90518; NID:g205400; PIDN:AAA93190.1; PID:g205401
C;Comment: This protein is coupled to a G protein and evokes a variety of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 R;O'Hara, P.J.; Sheppard, P.O.; Thogersen, H.; Venezia, D.; Haldeman, Neuron 11, 41-52, 1993
A;Title: The ligand-binding domain in metabotropic glutamate receptors A;Reference number: 158149; MUID:93332699; PMID:8338667
A;Accession: 158149
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A; Introns: 77/3; 115/3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Molecule type: DNA
A;Residues: 1-45,'C',47-142 <FR2>
A;Cross-references: EMBL:X59964; NID:g30263; PIDN:CAA42590.1; PID:g30264
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Gene: GLUR4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Molecule type: mRNA
A;Residues: 1-912 <TAN>
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A;Map position: 20p11.21-20p11.21
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Keywords: cysteine proteinase inhibitor; extracellular protein; saliva;
1-20/Domain: signal sequence #status predicted <SIG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Experimental source: brain
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16; Conserv
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Pred. No. 34;
3; Mismatches
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4; Mismatches
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Pred. No.
                                           Score 53; DB Pred. No. 34;
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                                                                        Length 912
          Indels
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          16;
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          Gaps
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cystatin C precursor - mouse
(;Species: Mus musculus (house mouse)
C;Date: 14-Dec-1900 #sequence_revision 14-Dec-1990 #text_change 16-Jul-1999
C;Accession: A36163
R;Solem, M.; Rawson, C.; Lindburg, K.; Barnes, D.
B;Cohem, Biophys. Res. Commun. 172, 945-951, 1990
B;Title: Transforming growth factor beta regulates Cystatin C in serum-free
A;Reference number: A36163; MUID:91054522; PMID:2241983
hypothetical protein T15M6.10 [imported] - Arabidopsis thaliana (;Species: Arabidopsis thaliana (mouse-ear cress) C;Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 23-Mar-2001 C;Accession: B96614 R;Theologis, A.; Ecker, J.R.; Palm, C.J.; Federspiel, N.A.; Kaul, S.; White Chin, C.W.; Chung, M.K.; Conn, L.; Conway, A.B.; Conway, A.R.; Creasy, T.H ansen, N.F.; Hughes, B.; Huizar, L.
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A;Residues: 1-3766 <MOE>
A;Residues: 1-3766 <MOE>
A;Cross-references: EMBL:U53147; PIDN:AAA96117.1; GSPDB:GN00023; CESP:C01B7
A;Experimental source: strain Bristol N2; clone C01B7
C;Genetics:
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A;Description: The sequence of C. elegans cosmid C01B7
A;Reference number: Z20581
A;Accession: T29165
A;Status: preliminary; translated from GB/EMBL/DDBJ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Accession: A36163
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-140 <SOL>
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C;Date: 15-Oct-1999 #sequenc
C;Accession: T29165
R;Woessner, J; Bradshaw, H.
                                                                                                                                                                                B96614
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C;Species: Caenorhabditis elegans
C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 15-Oct-1999
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                                                                                                                                                                                                        RESULT 14
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Similarity 41.4%;
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36.4%;
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Pred. No. 1.5e+02
                          C.J.; Federspiel, N.A.; Kaul, S.; White, O.; Alonso Conway, A.B.; Conway, A.R.; Creasy, T.H.; Dewar, K.
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Nature 408, 816-820, 2000

A; Authors: Hunter, J.L.; Jenkins, J.; Johnson-Hopson, C.; Khan, S.; Khaykin, B. C.A.; Li, J.H.; Li, Y.; Lin, X.; Liu, S.X.; Liu, Z.A.; Luros, J.S.; Maiti, R.; Rizzo, M.; Rooney, T.; Rowley, D.; Sakano, H. A; Authors: Salzberg, S.L.; Schwartz, J.R.; Shinn, P.; Southwick, A.M.; Sun, H.; Ker, M.; Wu, D.; Yu, G.; Fraser, C.M.; Venter, J.C.; Davis, R.W. A; Title: Sequence and analysis of chromosome 1 of the plant Arabidopsis. A; Reference number: A86141; MUID:21016719; PMID:11130712

A; Accession: B96614
                                                                                                                                                                           C;Superfamily: cystatin; cystatin homology C;Keywords: colostrum; cysteine proteinase inhibitor F;2-112/Domain: cystatin homology <CYS> F;48-52/Region: inhibitory #status predicted F;66-76,90-110/Disulfide bonds: #status predicted
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C;Superfamily: Arabidopsis thaliana hypothetical protein F24M12.210
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A;Residues: 1-112 <HIR>
                                                                                                                                                                                                                                                                                                                                                                 A;Title: Complete amino acid sequence of bovine colostrum low-M-r A;Reference number: A01271; MUID:85231205; PMID:3891407
                                                                                                                                                                                                                                                                                                                                                                                                                               C;Accession: A01271
R;Hirado, M.; Tsunasawa, S.; Sakiyama, F.; Niinobe, M.; Fujii,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C;Species: Bos primigenius taurus (cattle)
C;Date: 28-Feb-1986 #sequence_revision 28-Feb-1986 #text_change 06-Dec-1996
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A; Residues: 1-371 <STO>
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                                                                                                                                                                                                                                                                                                                                                                                                              FEBS Lett.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N; Alternate names: thiol proteinase inhibitor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cystatin -
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                                          1 QVTDHLEYHLNVEMQWTTCQKPE 23
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p360676 homo sapien
p14841 rattus norv
Q9h114 homo sapien
C19093 saimiri sci
p21460 mus musculu
Q27171 paramecium
P08935 bitis ariet
P01034 homo sapien
C19092 macaca mula
p28325 homo sapien
p31423 rattus norv
C97862 oryctolagus
P01035 bos taurus
 P48066

P94WC5

P14W4C5

P14W1563

C97563

C975696

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Q9d269 mus musculu
O88969 rattus norv
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6 homo sapien
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7 homo sapien
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0 arabidopsis
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Matches 33
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EMBL; AL096677; CAC17423.1; -.
HSSP; P01038; 1A90.
                                                                                         "Functional annotation of a full-length mouse cDNA Nature 409:685-690(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A. STRAIN=C57BL/6J; TISSUE=Epididymis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa;
Mammalia; Eutheria;
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CST11.
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10-OCT-2003
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                                     -!- SIMILARITY:
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hibitor; Signal; Alternative splicing
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Rodentia;
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annotation update)
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Missing (in isoform 2).
/FTId=VSP_001260.
; C585C8C39A585C3B CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus.
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Pred. No. 1
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RESULT 3
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088969;

30-MAY-2000

30-MAY-2000

10-OCT-2003
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Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Entropean Bioinformatics Institute. There are no restue by non-profit institutions as long as its content modified and this statement is not removed. Usage by and
                                                                                              This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                 Biochem. J. 340:85-93(1-1-FUNCTION: Performs
                                                                                                                                                                                                                                                                  STRAIN-Sprague-Dawley; TISSUE-Ep
MEDLINE-99247899; PubMed=1022966
Cornwall G.A., Hsia N., Sutton H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                    EMBL; AF090692;
HSSP; P01034; 10
                                                                         entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                   CST8 OR CRES
                                                                                                                                                                                                                                                                                                                                                                                                         Cystatin-related epididymal spermatogenic protein
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                                                                                                                                                                                                                                          cystatin-related epididymal spermatogenic
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                                                                                                                                                                                                                                                    "Structure, alternative splicing and chromosomal localization
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                                                                                                                                                                                        maturation.
SUBCELLULAR LOCATION:
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P01034; 1G96
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SM00043; CY; 1.
E; PS00287; CYSTATIN; FALSE_NEG.
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(Rel. 39, Last sequence update)
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                                                                                                                                                                           Belongs to the cystatin family.
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N-LINKED (GLCNAC. .
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Pred. No. 1
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(See http://www.isb-sib.ch/announce/
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InterPro;

PF00031; cystatin;

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Cystatin

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DESCRIPTION OF STATE 
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Best Local S
Matches 15
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P32766; O891
01-OCT-1993
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DISULFID
CARBOHYD
                     EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "The CRES gene: a unique testis-regulated gene related to the family is highly restricted in its expression to the proximal of the mouse epididymis.";
Mol. Endocrinol. 6:1653-1664(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cornwall G.A., Hsia N., Sutton H.G.; "Structure, alternative splicing and chromosomal localization of the cystatin-related epididymal spermatogenic gene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-OCT-1993 (Rel. 27, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Cystatin-related epididymal spermatogenic pro
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=93078799; PubMed=1280328; Cornwall G.A., Orgebin-Crist M.-C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
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                                                                                                                                     modified
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                                                                                                                                                                                                                                                                         elongating spermatids, whereas within the epididymis. exclusively synthesized by the proximal caput region of the epididymis it is exclusively synthesized by the proximal caput epithelium. INDUCTION: Testicular factors or hormones other than androgengement in the testicular fluid may be involved of CRES gene expression.
                                                                                                       s SWISS-PROT entry is copyright. It is produced through a cween the Swiss Institute of Bioinformatics and the EWBL European Bioinformatics Institute. There are no restrict by non-profit institutions as long as its content is lifted and this statement is not removed. Usage by and for its requires a license agreement (See http://www.isb-sib.
                                                                                                                                                                                                                                                               of CRES gene expression.
SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FUNCTION: Performs a specialized role
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              macuration.
                     AF091503; AAC61754.1; -. AF090691; AAC36316.1; -.
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                                                                                      an email to license@isb-sib.ch).
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Rodentia;
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protein) (Cystatin 8).
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Pred. No.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hann S.R.;
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                                                                                                           (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2.4e-06;
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30-MAY-2000
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CONFLICT
SEQUENCE
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060676;
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30-MAY-2000 (Rel. 39, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Cystatin-related epididymal spermatogenic pro
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                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=21638749;
                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Transient appearance of CRES protein
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Primates;
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Pred. No.
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or send a
             MEDLINE=90092122; PubMed=2689174; Cole T., Dickson P.W., Esnard F., Gauthier F., Schreiber G.;
                                                                                                       Rattus norvegicus (Rat)
Eukaryota; Metazoa; Cho
Mammalia; Eutheria; Rod
                                                                                                                                                                       01-APR-1990 (Rel. 14,
01-APR-1990 (Rel. 14,
28-FEB-2003 (Rel. 41,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a c between the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict the European Bioinformatics Institute. There are no restrict the European Bioinformatics Institutions as long as its content is used if y non-profit institutions as long as its content is
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"The DNA sequence and comparative analysis of human Nature 414:865-871(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
Thiol protease inhibitor; S
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GO; GO:0004869; F:cysteine pro
InterPro; IPR000010; Cystatin.
                                                      STRAIN=Buffalo;
                                                                SEQUENCE FROM N.A.
                                                                                                                                                              Cystatin
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                                                                                           NCBI_TaxID=10116;
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 CDNA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      non-profit institutions as long as its content is in no way d and this statement is not removed. Usage by and for commercial srequires a license agreement (See http://www.isb-sib.ch/announce/an email to license@isb-sib.ch).
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 structure
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                                                                                                                                                              precursor
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                                                                                                     Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
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PIR; S10587; S10587.
HSSP; P01034; 1G96.
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or send an email to license@isb-sib.ch).
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Bsnard A., Esnard F., Guillou F., Gauthier F.;

"Production of the cysteine proteinase inhibitor cystatin C Serroli cells.";
                                                                                                                                                                                                                                                                                                                                                                                                                        Thiol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SMART;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the El
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Esnard A., Benard F., Faucher D., Gaut

"Two rat homologues of human cystatin

FEBS Lett. 236:475-478(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Esnard F., Esnard
Brillard M., Gautl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eur. J. Biochem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pfam; PF00031; cystatin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEBS Lett.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Rat cystatin C: the complete amino acid sequence reveals a site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE OF 8-127.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FUNCTION: As an inhibitor of cysteine proteinases, this protein thought to serve an important physiological role as a local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              regulator of
                                                                                                                                                                                                                                                                                                                                                                                                                        protease
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Gauthier
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A., Faucher D.,
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inhibits cathepsin
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Homo sapiens

Cystatin-like 28-FEB-2003 (Rel. 41,

1 precursor

Last

annotation update)

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REDIANE-215344; runneu=1100002;
RA Deloukas P., Matthews L.H., Ashurst J., Burton J., Gilbert J.G.R.,
RA Deloukas P., Matthews L.H., Ashurst J., Barton J., Gilbert J.G.R.,
RA Bailey J., Barlow K.F., Bates K.N., Beard L.M., Beare D.M.,
RA Bailey J., Barlow K.F., Bates K.N., Beard C.M., Beare D.M.,
RA Beasley O.P., Bird C.P., Blakey S.E., Bridgeman A.M., Brown A.J.,
RA Buck D., Burrill W.D., Butler A.P., Carder C., Carter N.P.,
RA Clegg S., Cobley V.E., Collier R.E., Connor R.E., Corby N.R.,
RA Coulson A., Coville G.J., Deadman R., Dhami P.D., Dunn M.,
RA Coulson A., Coville G.J., Deadman R., Dhami P.D., Dunn M.,
RA Ellington A.G., Frankland J.A., Fraser A., French L., Garner P.,
RA Coulson A., Coville G.J., Deadman R., Dhami P.D., Dunn M.,
RA Hammond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J.,
RA Hammond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J.,
RA Hammond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J.,
RA Hammond S., Martin S.L., McConnachie L.J., McLay K., McMurray A.A.,
RA Milne S.A., Mistry D., Moore M.J.F., Mullikin J.C., Nickerson T.,
RA Milne S.A., Mistry D., Moore M.J.F., Mullikin J.C., Nickerson T.,
RA Rice C.M., Ross M.T., Scott C.E., Sehra H.K., Shownkeen R., Sims S.,
RA Rice C.D., Smith M.L., Soderlund C., Steward C.A., Sulston J.E.,
RA Swann R.M., Sycamore N., Taylor R., Tee L., Thomas D.W., Thorpe A.,
RA Mithehead S.L., Whittaker P., Willey D.L., Williams L., Williams S.A.,
Mithehead S.L., Whittaker P., Willey D.L., Williams S.A.,
BA Milne S.A., Whittaker P., Willey D.L., Williams S.A.,
BA Milne S.A., Whittaker P., Willey D.L., Williams S.A.,
BA Milne S.A., Whittaker P., Willey D.L., Williams S.A.,
BA Milne S.A., Whittaker P., Willey D.L., Williams S.A.,
BA Milne S.A., Whittaker P., Willey D.L., Williams S.A.,
BA Milne S.A., Williams S.A., Hubbard T., Durbin R.M., Bentley D.R., Beck S.,
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                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                            SIGNAL
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          European Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way iffed and this statement is not removed. Usage by and for commercial ities requires a license agreement (See http://www.isb-sib.ch/announce/send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protease
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12; Conserv
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QVTDHLEYHLNVEMQWTTCQKPETTN--CVPQERE 33
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2S00287; CYSTATIN; FALSE
cease inhibitor; Signal.
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Pred. No. 0.08
11; Mismatches
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RESULT 9
CYTC_MOUSE
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Best Local :
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DISULFID
SEQUENCE
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15-JUL-1998
28-FEB-2003
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                                 Cystatin CST3.
                                                                                                                                                                                                                                                                     CHAIN
ACT_SITE
SITE
Mus musculus (Mouse
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                    01-FEB-1996
10-OCT-2003
                                                                        P21460;
01-MAY-1991
                                                                                                                                                                                                                                                                                                                                                                              EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Saimiri sciureus (Common squirrel monkey).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Platyrrhini; Cebidae; Cebinae; Saim
                                                                                                                                                                                                                                                                                                                Thiol
                                                                                                                                                                                                                                                                                                                                                                                                                      the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Wei L.H., Walker L.C., Levy E.;
"Cystatin C. Icelandic-like mutation
cerebrovascular beta-amyloidosis.";
                                                                                                                                                                                                                                                                                                                                                                                                     or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cystatin
                                                                                                                                                                                                                                                                                                      SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Stroke
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=97054523; PubMed=8898820;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                           PROSITE; PS00287;
                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR000010; Cystatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FUNCTION: As an imhibitor of cysteine prote:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                thought to serve an important phys
regulator of this enzyme activity
                                                                                               MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SAISC
                                                                                                                                                                                                                                                                                                                                      PF00031; cystatin; ; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                    U52028; AAB64051.1;
P01034; 1G96.
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                                                                                                                                                                                                                                                                                                                                                                                                                requires a license agreement
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QLTTGVEYIVTVKIGWTKCKRNDTSNSSCPLQSKK 127
                                         precursor
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(Rel. 33, Last sequence up
(Rel. 42, Last annotation
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27
37
81
99
123
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                     (Mouse)
                                                                                                                                                                                                                                                                                                                inhibitor;
                                                                                              STANDARD;
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                                                                                                                                                                                                                                                                                                                            CYSTATIN;
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146
37
85
109
Chordata;
Rodentia;
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                                          (Cystatin
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Last
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REACTIVE SITE.
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annotation update)
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Craniata; Vert
Sciurognathi;
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Vertebrata; Euteleostomi;
thi; Muridae; Murinae; Mus
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RX MEDLINE=23388257; PubMed=12477932;

RX Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,

RX Klausner R.D., Collins F.S., Wagner L., Shemmen C.M., Schuler G.D.,

RX Klausner R.D., Collins F.S., Wagner L., Schaefer C.F., Bhat N.K.,

RX Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

RX Altschul S.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,

RX Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

RX Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

RX Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

RX Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

RX Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

RX Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,

RX Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,

RX Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

RX Villalon D.K., Muzny D.M., Sodergren B.J., Lu X., Gibbs R.A.,

RX Alting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,

RX Alting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,

RX Alting M., Madan A., Krzywinski M.I., Skalska U., Smailus D.E.,

RX Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,

RX Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,

RX Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,

RX Generation and initial analysis of more than 15,000 full-length

RX Thuman and mouse cDNA sequences.",

"Generation and initial analysis of more than 15,000 full-length

RX Thuman and mouse cDNA sequences.",

"Generation and initial analysis of more than 15,000 full-length

RX Thuman and mouse cDNA sequences.",

"Generation and initial analysis of more than 15,000 full-length

RX Thuman and mouse cDNA sequences.",

"Generation of this proteinases, this protein is

C. Teonlator of this eartivity.
                                                             EMBL; M59470; AAA63298.1; -.
EMBL; U10098; AAB41056.1; -.
EMBL; AF483486; AAL90761.1; -.
EMBL; AF483487; AAL90761.1; -.
EMBL; BC002072; AAH02072.1; -.
EMBL; BC002072; AAH02072.1; -.
FIR; A36163; A36163.
HSSP; P01034; 1G96.
MGD; MGI:102519; CEt3.
                                                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN=ILS, and ISS;
MEDLINE=21363810; PubMed=11471062;
Ehringer M.A., Thompson J., Conroy O., Xu Y., Yang F., Canniff J.,
Beeson M., Gordon L., Bennett B., Johnson T.E., Sikela J.M.;
"High-throughput sequence identification of gene coding variants
within alcohol-related QTLs.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN=129/Sv; TISSUE=Liver;
MEDLINE=95137392; PubMed=7835704;
Huh C., Nagle J.W., Kozak C.A., Abrahamson M., Karlsson S.;
"Structural organization, expression and chromosomal mapping
mouse cystatin-C-encoding gene (Cst3).";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=91054522; PubMed=2241983;
Solem M., Rawson C., Lindburg K., Barnes D.;
"Transforming growth factor beta regulates cystatin C
mouse embryo (SFME) cells.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gene 152:221-226 (1995).
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                                                                                                                                                                                                                                                                                              or send
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[1]
                  nterPro; IPR000010; Cystatin.
Pfam; PF00031; cystatin; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     thought to serve an important physiological regulator of this enzyme activity.
SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                              an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12:657-663 (2001).
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RESULT 10
DYHC_PARTE
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Best Local S
Matches 13
                                                                                                                                                                                                                retrograde motility of vesicles and organelles along microtubules. Dynein has ATPase activity; the force-producing power stroke is thought to occur on release of ADP.

-!- SUBUNIT: Consists of at least two heavy chains and a number of intermediate and light chains.
-!- SUBCLIULAR LOCATION: Cytoplasmic.
-!- DOMAIN: Dynein heavy chains probably consist of an N-terminal stem (which binds cargo and interacts with other dynein components), and the head or motor domain. The motor contains six tandemly-linked AAA domains in the head, which form a ring. A stalk-like structure (formed by two of the coiled coil domains) protrudes between AAA 4 and AAA 5 and terminates in a microcubule-binding site. A seventh domain may also contribute to this tring; it is not clear whether the N-terminus or the C-terminus forms this extra domain. There are four well-conserved and two non-conserved ATPase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DYHC PARTE
Q27171;
Q1-NOV-1997
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ACT SITE
SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CONFLICT
                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kandl K.A., Forney J.D., Asai D.J.;
"The dynain genes of Paramecium tetraurelia: the structure and expression of the ciliary beta and cytoplasmic heavy chains.";
Mol. Biol. Cell 6:1549-1562(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PROSITE; PS00287;
Thiol protease in
SIGNAL 1
                                         entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DHC-8.
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10-OCT-2003
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=96157890; PubMed=8589455;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN=Stock 51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=5888;
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             EMBL; U20449; AAA75445.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
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                                                                                                                                                             SIMILARITY:
                                                                                                                                                                                      sites, one per AAA domain. Probably only one of these (within ) actually hydrolyzes ATP, the others may serve a regulatory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          75
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140 AA;
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                                                                                                                                                           Belongs to the dynein heavy chain family.
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31
79
103
137
16
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cytosolic (DYHC).
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REACTIVE SITE.
SECONDARY AREA OF
BY SIMILARITY.
BY SIMILARITY.
A -> G (IN REF. 1)
L -> F (IN REF. 1)
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-> F (IN REF. 1).
3A563406DD58D0F5 CRC64;
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                                                       (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    update)
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CYT_BITAR
P08935;
01-NOV-1988
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PROSITE;
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DOMAIN
                                                                                                                                                                               MEDLINE=88076861; PubMed=3500714; Ritonja A., Evans H.J., Machleidt v "Amino acid sequence of a cystatin adder (Bitis arietans).";
                                                                                                                                                                                                                                                                                       sukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Lepidosauria; Squamata; Scleroglossa; Serpentes; Colubroidea; Viperidae; Viperinae; Bitis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; I
SMART;
                                                                                                             PIR; A28793; A28793.
HSSP; P01038; 1CEW.
                                                                                                                                                                  Biochem. J. 246:799-802(1987).
                                                                                                                                                                                                                                                                                                                                            Cystatin.
                                                                                                                                     -!- SUBCELLULAR LOCATION: 8
                                                                                                                                                                                                                                                    SEQUENCE
  DISULFID
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                                                                                                                                                                                                                                     SSUE=Venom;
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                                                                                                                                                                                                                                                                             ridae; Viperinae;
_TaxID=8692;
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                                                      PF00031; cystatin;
SM00043; CY; 1.
B; PS00287; CYSTAT:
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                                                                                               38; 1CEW.
IPR000010;
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SEQUENCE
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HUMAN
MEDLINE=21638749; PubMed=11780052;
Deloukas P., Matthews L.H., Ashurst J., Burton J., Gilbert J.G.
Jones M., Stavrides G., Almeida J.P., Babbage A.K., Bagguley C.
Bailey J., Barlow K.F., Bates K.N., Beard L.M., Beare D.M.,
Beasley O.P., Bird C.P., Blakey S.E., Bridgeman A.M., Brown A.J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TISSUE=Leukocyte;
MEDLINE=90303202; PubMed
Abrahamson M., Olafsson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=87219149; PubMed=3495457;
Abrahamson M., Grubb A., Olafsson I., Lundwall A.;
"Molecular cloning and sequence analysis of cDNA codi
precursor of the human cysteine proteinase inhibitor
FEBS Lett. 216:229-233(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21-JUL-1986 (Rel. 01, Created)
01-AUG-1988 (Rel. 08, Last sequence up
10-OCT-2003 (Rel. 42, Last annotation
Cystatin C precursor (Neuroendocrine b
(Post-gamma-globulin).
                                                                                                                                         Submitted
                                                                                                                                                            genes."
                                                                                                                                                                            Dickinson D.P., "Acquisition of epithelial cell
                                                                                                                                                                                                                                                                           "The human cystatin C gene (CST3) is a member family which is localized on chromosome 20."; Biochem. Biophys. Res. Commun. 162:1324-1331()
                                                                                                                                                                                                                                                                                                                                MEDLINE=89350949; PubMed=2764935; Saitoh E., Sabatini L.M., Eddy R.L., Isemura S., Sanada K.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens (Human)
Eukaryota; Metazoa;
Mammalia; Eutheria;
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                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Stroke in Icelandic p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TISSUE-Brain
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Levy E.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Structure
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14; Conserv
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Pred.
                                                                                                                                                                                                                                                                             chromosome 20.";
n. 162:1324-1331(1989)
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RA Buck D., Burrill W.D., Butler A.P., Carder C., Carter N.P.,
RA Chagman J.C., Clamp M., Clark G., Clark S.Y., Clee C.M.,
RA Clagg S., Cobley V.E., Collier R.E., Connor R.E., Corby N.R.,
RA Clagg S., Cobley V.E., Collier R.E., Connor R.E., Corby N.R.,
RA Clagg S., Cobley V.E., Collier R.E., Connor R.E., Corby N.R.,
RA Coulson A., Coville G.J., Deadman R., Dhami P.D., Dunn M.,
RA Ellington A.G., Frankland J.A., Fraser A., French L., Garner P.,
RA Ellington A.G., Frankland J.A., Fraser A., French L., Garner P.,
RA Grafham D.V., Griffiths G.C., Griffiths M.N.D., Gwilliam R., Hall R.E.,
RA Hammond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J.,
RA Huckle E., Hunt A.R., Hunt S.E., Jekosch K., Johnson C.M., Johnson D.,
RA Huckle E., Hunt A.R., Hunt S.E., Jekosch K., Johnson C.M., Johnson D.,
RA Kay M.P., Kimberley A.M., King A., Knights A., Laird G.K., Lawlor S.,
RA Kay M.P., Kimberley A.M., King A., Knights A., Laird G.K., Lawlor S.,
RA Marsh V.L., Martin S.L., McConnachie L.J., McLay K., McMurray A.A.,
RA Mine S.A., Mastry D., Moore M.JF., Mullikin J.C., Nickerson T.,
RA Mine S.A., Mastry D., Moore M.JF., Plumb R.W., Ramasy H.,
RA Rice C.M., Ross M.T., Scott C.E., Sebra H.K., Shownkeen R., Sims S.,
RA Rice C.M., Ross M.T., Scott C.E., Sebra H.K., Shownkeen R., Sims S.,
RA Swann R.M., Sycamore N., Taylor R., Tee L., Thomas D.W., Thorpe A.,
RA Whitehead S.L., Whittaker P., Willey D.L., Williams L., Williams S.A.,
RA Wilming L., Wray P.W., Hubbard T., Durbin R.M., Bentley D.R., Beck S.,
RA ROCers J.
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Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,

Strausberg R.L., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,

A Klausner R.D., Collins F.S., Wagner L., Schaefer C.F., Bhat N.K.,

A Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

A Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,

A Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

A Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,

A Stapleton M.J., Ugdin T.B., Toshiyuki S., Carninci P., Prange C.,

A Brownstein M.J., Ugdin T.B., Toshiyuki S., Carninci P., Prange C.,

Brownstein M.J., Ugdin T.B., Toshiyuki S., Carninci P., Prange C.,

Brownstein M.J., Ugdin T.B., Peters G.J., Abramson R.D., Mullahy S.J.,

A Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,

Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,

A Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

A Richards S., Worley K.C., Hale S., Garcia A.M., Gibbs R.A.,

A Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,

A Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,

A Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,

A Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
                                                                                                                                                                     MEDITINE-84128015; PubMed-6365094;
Brzin J., Popovic T., Turk V.;
"Human cystatin, a new protein inhibitor of cysteine Biochem. Biophys. Res. Commun. 118:103-109(1984).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C., Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.N., Krzywinski m.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.; "Generation and initial analysis of more than 15,000 full-leng human and mouse cDNA sequences.";
Grubb A., Loefberg H., Barrett A.J., "The disulphide bridges of human cys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "The DNA sequence and comparative analysis of human chromosome 20."; Nature 414\colon865-871\,(2001) .
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Human gamma-trace, a basic microprotein: amino acid presence in the adenohypophysis."; Proc. Natl. Acad. Sci. U.S.A. 79:3024-3027(1982).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                    egg white.";
l. Chem. 364:1487-1496(1983)
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         cystatin
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    (gamma-trace)
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reaction based analysis.";
Hum. Genet. 89:377-380(1992).
-!- FUNCTION: As an inhibitor of cysteine proteinases, this protein
-!- FUNCTION: As an important physiological role as a local
                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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Abrahamson M., Jonsdottir S., Olafsson I., Jensson O., Grubb & Wilereditary Cystatin C amyloid angiopathy: identification of t disease-causing mutation and specific diagnosis by polymerase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Human cystatin C, an amyloidogenic three-dimensional domain swapping."; Nat. Struct. Biol. 8:316-320(2001).
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Abrahamson M., Jaskolski M.;
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[12]
                                                                                                                                                                            Pfam; PF00031; cystatin; SMART; SM00043; CY; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            thought to serve an important physiological role regulator of this enzyme activity. SUBUNIT: Homodimer.
TISSUE SPECIFICITY: Expressed in highest levels vas deferens, brain, thymus, and ovary and the lember of the submandibular gland.
                                                                                                                                                                                                                                                                                                                            L; X05607; CAA29096.1; -.

L; X52255; CAA36497.1; -.

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L; M27899; AAA52164.1; JOINED.

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 characteristics of amyloid.
SIMILARITY: Belongs to the cystatin family.
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AL121894;
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l Similarity
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P28325;
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Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
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regulator of this enzyme activity.
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requires a license agreement

(See http://www.isb-sib.ch/announce,

and

for

to license@isb-sib.ch).

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RA Deloukas P., Matthews L.H., Ashurst J., Burton J., Gilbert J.G.R.,
RA Jones M., Stavrides G., Almeida J.P., Babage A.K., Bagguley C.L.,
RA Bailey J., Barlow K.F., Bates K.N., Beard L.M., Beare D.M.,
Beasley O.P., Bird C.P., Blakey S.E., Bridgeman A.M., Brown A.J.,
RA Beasley O.P., Bird C.P., Blakey S.E., Bridgeman A.M., Brown A.J.,
RA Buck D., Burrill W.D., Butler A.P., Clarker N.P.,
Clark S.Y., Clee C.M.,
RA Clegg S., Cobley V.E., Collier R.E., Connor R.E., Corby N.R.,
RA Clegg S., Cobley V.E., Collier R.E., Connor R.E., Corby N.R.,
RA Clegg S., Cobley V.E., Collier R.E., Connor R.E., Corby N.R.,
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RA Clegg S., Cobley V.E., Collier R.E., Connor R.E., Corby N.R.,
RA Hammond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J.,
RA Hammond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J.,
RA Hammond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J.,
RA Hammond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Lavior S.,
RA Kay M.P., Kimberley A.M., King A., Knights A., Laird G.K., Lawlor S.,
RA Kay M.P., Kimberley A.M., King A., Knights A., Laird G.K., Lawlor S.,
RA Milne S.A., Mistry D., Moore M.J.F., Mullikin J.C., Nickerson T.,
RA Milne S.A., Mistry D., Moore M.J.F., Mullikin J.C., Nickerson T.,
RA Milne S.A., Mistry D., Moore M.J.F., Mullikin J.C., Nickerson T.,
RA Suce C.D., Smith M.L., Soderlund C., Steward C.A., Sulston J.E.,
RA Kucher B.J., Whittaker P., Willey D.L., Williams L., Williams S.A.,
RA Wilming L., Wray P.W., Hubbard T., Durbin R.M., Bentley D.R., Beck S.,
RA Kogers J.,
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                                                                                                                                                                                                                                                                                                                                                                                                                      Balbin M., Freije J.P., Abrahamson M., Velasco G., "A sequence variation in the human cystatin D gene amino acid (Cys/Arg) polymorphism at the protein le Hum. Genet. 90:668-669(1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=93186144;
Balbin M., Freije
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "The DNA sequence and comparative analysis of human chromosome 20.";
Nature 414:865-871(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
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Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Structure and expression
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                                                                                                                                                                                                       FUNCTION: Cysteine proteinase inhibitor that possibly plays a protective role against proteinases present in the oral cavity. TISSUE SPECIFICITY: Expressed in parotid gland but not in seminal vesicle, prostate, epididymis, testis, ovary, placenta, thyroid, gastric corpus, small intestine, liver, or gail bladder tissue. SIMILARITY: Belongs to the cystatin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cysteine
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proteinase inhibitor.";
266:20538-20543(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         268:15737-15744(1993)
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hamson M., Olafssonn
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          r, and identification of the native protein
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VARIANT
                      "Interaction of the C-terminal tail region of the metabotropic glutamate receptor 7 with the protein kinase C substrate PICK1."; Eur. J. Neurosci. 12:4215-4221(2000).
-!- FUNCTION: Receptor for glutamate. The activity of this receptor is mediated by a G-protein that inhibits adenylate cyclase
                                                                                                                                                                                                                                                                MEDLINE=93332699; PubMed=8338667; O'Hara P.J., Sheppard P.O., Thoegersen H., Venezia D., Haldeman McGrane V., Houamed K.M., Thomsen C., Gilbert T.L., Mulvihill E. "The ligand-binding domain in metabotropic glutamate receptors i related to bacterial periplasmic binding proteins.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Metabotropic glutamate receptor 4
GRM4 OR GPRC1D OR MGLUR4.
Rattus norvegicus (Rat)
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EMBL; X70377; CAA49838.1; --
EMBL; AL591074; CAC94785.1;
PIR; A47142; A47142.
                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=92110002; PubMed=1309649;
Tanabe Y., Masu M., Ishii T., Shigemoto R., Nakanishi S.;
"A family of metabotropic glutamate receptors.";
Neuron 8:169-179(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SMART;
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GO; GO:0004869; F:cysteine protease inhibitor activity; TAS.
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Genew; HGNC:2477; CST5.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=10116;
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                                                                                                                                                                                MEDLINE=20571397;
                                                                                                                                                                                                         INTERACTION WITH PRKCABP.
                                                                                                                                                                                                                                                     Neuron 11:41-52(1993).
                                                                                                                                                                                                                                                                                                                                                                                       TISSUE=Brain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
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(Rel. 26, Last sequence update)
(Rel. 41, Last annotation update)
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J., Wischmeyer E.,
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W; CEFA89BA87A0DA68 CRC64;
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Pred. No. 1.8;
4; Mismatches :
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Sciurognathi; Muridae; Murinae;
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CONTACT.
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Search completed: March 18,

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Matches 16
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Multigene
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PROSITE; P800979; G PROTEIN_RECEP_F3_2; 1.

PROSITE; P800980; G_PROTEIN_RECEP_F3_3; 1.

PROSITE; P800981; G_PROTEIN_RECEP_F3_3; 1.

PROSITE; P800981; G_PROTEIN_RECEP_F3_4; 1.

PROSITE; P850259; G_PROTEIN_RECEP_F3_4; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Entrepean Bioinformatics Institute. There are no restructe by non-profit institutions as long as its content modified and this statement is not removed. Usage by and entitles requires a license agreement (See http://www.isb-sorsend an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                            CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; M92077; -; NOT_ANNOTATED_CDS.
EMBL; M90518; AAA93190.1; -.
PIR; JH0563; JH0563.
                                                                                                                                                                                                                                                                                                      SIGNAL
                                                                                                                                                                                                                                                                                                                                                                               Pfam; PF00003; 7tm_3; 1. Pfam; PF01094; ANF_receptor; 1.
                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR001828; InterPro; IPR000337;
                                                                                              CARBOHYD
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SUBCELULIAR LOCATION: Integral membrane protein.
TISSUE SPECIFICITY: Is widely distributed in the CNS. Predominant expression is seen in the granule cells of the cerebellum.
SIMILARITY: BELONGS TO FAMILY 3 OF G-PROTEIN COUPLED RECEPTORS.
STRONGEST, TO MGLUR6.
 496
                                     l Similarity
16; Conserv
TDHL--HLRIERMOWPGSGQQLPRSICSLP-
               TDHLEYHLNVE-MOW------TTCQKPETTNCVPQERE
                                                                                                                                                                                                                                                                                                               family.
                                                                          Conservative
                                                                                     101818
                                               28.0%;
39.0%;
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GPCR_Mgr.
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Pred. No. 12;
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N-LINKED
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METABOTROPIC GLUTAMATE RECEPTOR
EXTRACELLULAR (POTENTIAL).
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                                                                                                        N-LINKED
                                                                                                                                              CYTOPLASMIC (POTENTIAL)
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EXTRACELLULAR (POTENTIAL).
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12;
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 -CQPGERK 530
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Maximum
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Maximum Match 100%
Listing first 45 summaries
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Perfect score:
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    Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
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1: sp_archea:*

2: sp_bacteria

3: sp_fungi:*
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Match
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189
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sp_bacteria:*
sp_fungi:*
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sp_organelle:*
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sp_rodent:*
sp_virus:*
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Q8K5A3
Q9DAP1
Q80ZN5
Q18150
Q8T9G8
Q94M04
  Q9U6B4
Q9EPX9
Q9U5A9
Q9C7Z0
Q9CAU8
Q8LAU8
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Q8T9K4
Q9VLM8
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OBtaa0 homo sapien QBt9k4 drosophila Q9vlm8 drosophila Q9u6b4 drosophila Q9ebx9 mus musculu Q9u5a9 manduca sex Q9c7z0 arabidopsis Q8lau8 arabidopsis Q93z38 arabidopsis
                                                             Q8wxu6 homo sapien
Q8k5a3 rattus norv
Q9dap1 mus musculu
Q80zn5 mus musculu
Q80zn5 mus cusculu
Q80zn5 mus cusculu
Q80zn6 caenorhabdi
Q8t9g8 drosophila
Q94m04 bacteriopha
Q8tad homo sapien
Q8tad homo sapien
Q8tp4 drosophila
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ALIGNMENTS

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RESULT 2
Q8K5A3
ID Q8K5
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DT 01-0
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Matches 33
Q8K5A3;
Q8K5A3;
01-OCT-2002
01-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                       Q8WXU6;
Q8WXU6;
01-MAR-2002
01-MAR-2002
01-JUN-2003
                                                                                                                                                                                                            Hamil K.G., Liu Q., Zhang Y.-L., French F.S., Hall S.H.;
"SC13: A novel epididymal specific member of the cystatin family.";
Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; AR335480; AAL71991.1;
GO; GO:0004869; F:cysteine protease inhibitor activity; IEA.
InterPro; IPR000011; Cystatin.
Pfam; PR00031; Cystatin; 1.
SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                       Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID=9606;
                                                                                                                                                                                                     SEQUENCE
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                                                                                                               QVTDHLEYHLNVEMQWTTCQXPETTNCVPQERE 33
                                                                                                  QVTDHLEYHLNVEMQWTTCQKPETTNCVPQERE 108
                                                                                                                                                                                                     138 AA;
(TrEMBLrel. 22, Created)
(TrEMBLrel. 22, Last sequence update)
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(TrEMBLrel. 20, Last sequence update)
(TrEMBLrel. 24, Last annotation updat
                                                                                                                                                    Conservative
                                       PRELIMINARY;
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                                                                                                                                                              100.0%; Score 189; DB 4; 100.0%; Pred. No. 4.8e-20;
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01-JUN-2003

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Last annotation update

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XX Kawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,
XX Kawai J., Shinagawa A., Shibata K., Yoshino M., Adachi J., Fukuda S.,
XA Arakawa T., Hara A., Fukunishi Y., Konno H., Kadachi J., Fukuda S.,
XA Aliawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
XA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
XA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
XA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
XA Saito T., Okazaki Y., Gojobori T., Bosuka H.,
XA Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,
XA Fleischmann W., Gaasterland T., Nikaido I., Pesole G., Quackenbush J.,
XA Kuchl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
XA Kuchl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
XA Kuchl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
XA Kuchl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
XA Kuchl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
XA Schriml L.M., Staubhi F., Suzuki R., Tomita M., Washio T.,
XA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
XA Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
XA Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
XA Busunstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,
XA Lyons P., Marchionni L., Mashima J., Mazzarelli S., Kamiya M., Lee N.H.,
XA Basaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
XA Murshawa Poris A. Yoshida M., Hasoya Y. Kawai H., Kohtenki S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
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SEQUENCE
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Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
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Hamil K.G., Hall S.H.;
Submitted (APR-2002) to the EMBL/GenBank/DDBJ databases.
EMBL; AF501290; AAM21709.1; -.
GO; GO:0004869; F:cystcine protease inhibitor activity;
GO; GO:0004869; F:cystcine protease inhibitor activity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                               InterPro; IPR000010; Cystatin.
Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
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01-JUN-2001
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                                                                                                                                                                                     EMBL; AK005665; BAB24175.1; HSSP; P01038; 1CEW.
                                                                                                                                                                                                                                                                                                                                    Wynshaw-Boris A., Yoshida K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN=C57BL/6J;
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1700006C19RIK.
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   SEQUENCE
                                                                                                                                                                                                                                        Nature 409:685-690(2001)
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                                                                                                                        ; MGI:1916544; 1700006C19Rik.
GO:0004869; F:cysteine prote
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QMTNHMEFHITVEMQRTTCLKTEKNLCNVQEGE 108
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      16811 MW;
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54.5%;
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                                                                                                                                                                                                                                                                              full-length mouse cDNA collection.";
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Pred. No.
                                                                                                                                                                                                                                                                                                                                           Hasegawa Y.,
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Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Craniata; Vertebrata; Euteleostomi;
Sciurognathi; Muridae; Murinae; Rattus
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      C20FA0D8B1AC378C CRC64;
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3.7e-06;
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                                                                                                                                                                                                                                                                                                                                       Kawaji H., Kohtsuki S.,
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Q80ZN5;
01-JUN-2003
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                      Wilson R., Ainscough R., Anderson K., Baynes C., Berks M.,
Bonfield J., Burton J., Connell M., Copsey T., Copper J., Coulson A
Bonfield J., Burton J., Connell M., Copsey T., Copper J., Coulson A.
Craxton M., Dear S., Du Z., Durbin R., Favello A., Fulton L.,
Gardner A., Green P., Hawkins T., Hiller L., Jier M., Johnston L.,
Jones M., Kershaw J., Kirsten J., Laister N., Latreille P.,
Lightning J., Lloyd C., Mcmurray A., Mortimore B., O'Callaghan M.,
Parsons J., Percy C., Rifken L., Roopra A., Saunders D., Shownkeen J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Caenorhabditis elegans.
Eukaryota; Metazoa; Nen
Rhabditidae; Peloderina
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O18150; O45627;
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ProDom; PD001231; Cystatin_C/M; 1.
SMART; SM00043; CY; 1.
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GO; GO:0004869; F:cysteine protease
InterPro; IPR000010; Cystatin.
InterPro; IPR003243; Cystatin_C/M.
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Mammalia; Eutheria;
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                                                                                                                                                                                                                                                                                                                                                                                  White S.
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7; Mismatches
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      (H)
   Roopra A., Saunders D., E., Staden R., Sulston G
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Best Local S
Matches 13
                                                                                                           Query Match
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Matches 10
                                                                                                                                                                                                                   PlyBase; FBgn0027094; Aats-ala.

R GO; GO:0004813; F:alanine-tRNA ligase activity; IEA.

GO; GO:0004813; F:alanine-tRNA ligase activity; IEA.

GO; GO:0005524; F:arb binding; IEA.

GO; GO:000576; F:nucleic acid binding; IEA.

GO; GO:0006419; P:alanyl-tRNA aminoacylation; IEA.

InterPro; IPR003156; DHHA1.

R InterPro; IPR002318; tRNA-synt_2c.

R InterPro; IPR006193; tRNA-synt_Ala.

Pfam; PF012411; tRNA-synt_2c; 1.

R Pfam; PF012411; tRNA-synt_2c; 1.

R Pfam; PF01411; tRNA-synt_2c; 1.

R PFAM; PS01860; AA TRNA LIGASE II ALA; 1.

SEQUENCE 540 AA; 59580 MW; B870DCF9C386843B CRC64;
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EMBL; ALO21066; CAB15925.1; -.
EMBL; 281133; CAB15925.1; JOINED.
PIR; T23130; T23130.
WOZMBED; T28BB.4; CEL6519.
InterPro; IPRO08938; ARM.
SEQUENCE 1779 AA; 205511 MW; 70A4
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01-JUN-2002
01-OCT-2003
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neopbera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
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AATS-ALA OR CG13391.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
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                                               QVTDHLEYHLNVEMQWTTCQKPETTNCV 28
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KVGDELELHIDVERRWLTMKNHSATHAL 184
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(TrEMBLrel. 21, Last sequence update)
(TrEMBLrel. 25, Last annotation update)
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205511 MW; 70A4489148B96F3E CRC64;
                                                                                                     Score 57; DB 5
Pred. No. 6;
7; Mismatches
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Pred. No. 1.9;
8; Mismatches
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QSTAAO;
QSTAAO;
O1-UN-2002 (TrEMBI
O1-UN-2002 (TrEMBI
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Similar to PRAM-1 p
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01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation updat
Major core structural protein P1.
Eukaryota; Metazoā; Arthropoda; Hexapoda; Inse
Neoptera; Endopterygota; Diptera; Brachycera;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                    GM03058p.
AATS-ALA OR CG13391.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted (APR-2002) to the EMBL/GenBank/DDBJ EMBL; BC026171; AAH26171.1; -.
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Viruses; dsRNA viruses;
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Mammalia; Eutheria;
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PROSITE; PS00012; PHOSPHOPANTETHEINE; 1.
SEQUENCE 723 AA; 78950 MW; F5DEF7FF93A50B7C
                                                                  Drosophila melanogaster (Fruit fly).
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12; Conserv
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(TrEMBLrel.
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(TIEMBLrel. 21, Last sequence update)
(TIEMBLrel. 21, Last annotation update)
PRAM-1 protein, PML-RARA target gene encoding
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89091 MW; 405E01953B2704DD CRC64;
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Primates;
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Pred. No.
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RA Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Adams M.D., Celniker S.E., Holt R.A., Hoskins R.A., Galle R.F.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA George R.A., Lewis S.E., Richards M.D., Zhang Q., Chen L.X.,
RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
RA Wan K.H., Daybayani A., An H.-J., Andrews Pfannkoch C., Baldwin D.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Hostin D., Houston K.A., Howland T.J., Hernandez J.R., Houck J.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Champe M., Chawez C., Dorsett V., Farfan D., Frise E., George R.,
Ad Gonzalez M., Guarin H., Li P., Liao G., Miranda A., Mungall C.J.,
AN Nunco J., Paccleb J., Paragas V., Park S., Phouanenavong S., Wan K.,
Yu C., Lewis S.E., Rubin G.M., Celniker S.;
Submitted (DEC-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; AY069255, AAL39400.1;
PR PAYBase; FBgn0027094; Aats-ala.
GO; GO:0004813; F:alanine-tRNA ligase activity; IEA.
GO; GO:0004813; F:alanine-tRNA ligase activity; IEA.
GO; GO:0005524; F:ATP binding; IEA.
GO; GO:0005524; F:ATP binding; IEA.
GO; GO:0006419; P:alanyl-tRNA aminoacylation; IEA.
GO; GO:0006419; P:
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Best Local :
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Q9VLM8;
01-MAY-2000
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MEDLINE=20196006; PubMed=10731132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
NCBI_TaxID=7227;
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01-OCT-2003 (TrEMBLrel.
AATS-ALA protein.
AATS-ALA OR CG13391.
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Brokstein P., Hong L., Agba
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25,
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Last annotation update)
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Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
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11;
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RESULT 11
Q9U6B4
           DRRRRR RN COCCOST DD ACD DRRRR RN COCCOST DD ACD DRRRR RN COCCOST DD ACD DRRR RN COCCOST DD ACD DD AC
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Best Local S
Matches 10
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                                                                                                                                                                                                                       Chihade J.W., Brown J.R., Schimmel P., Ribas de Pu "Detection of an Intermediate Stage of Mitochondr: Submitted (SEP-1999) to the EMBL/GenBank/DDBJ dation EMBL; AF188718; AAF05593.1; -... FlyBase; FBgn0027094; Aats-ala. GO; GO:0004813; F:alanine-tRNA ligase activity; II GO; GO:0005524; F:ATP binding; IEA. GO; GO:0005576; F:nucleic acid binding; IEA. GO; GO:0005419; P:alanyl-tRNA aminoacylation; IEA.
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Pfam; PF01411; tRNA-SYNT-2C; 1.

PRINTS; PR00980; TRNASYNTHALA.

TIGRPAMS; TIGR00344; alas; 1.

PROSITE; PS50860; AA TRNA LIGASE II ALA; 1.

PROSITE; PS50860; AA TRNA LIGASE II ALA; 1.

SEQUENCE 966 AA; 107741 MW; B1B63A7A8FB87B6E CRC64;
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GO; GO:0005524; F:ATP binding; IEA.
GO; GO:0005676; F:nucleic acid binding; IEA.
GO; GO:0006419; P:alanyl-trNA aminoacylation; IEA.
InterPro; IPR003156; DHHAI.
InterPro; IPR003156; DHHAI.
InterPro; IPR00318; tRNA-synt_2c.
InterPro; IPR00318; tRNA-synt_Ala.
InterPro; IPR00318; tRNA_synt_Ala.
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NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Alanyl-tRNA synthetase.
AATS-ALA OR ALAS OR CG13391.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-MAY-2000 (TrEMBLrel. 13, 01-MAY-2000 (TrEMBLrel. 13, 01-OCT-2003 (TrEMBLrel. 25,
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01-MAY-2000
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Pfam; PF02272; DHHA1; 1.
Pfam; PF01411; tRNA-synt 2c; 1.
PRINTS; PR00980; TRNASYNTHALA.
                                                                                                       InterPro; IPR003156; DHHA1.
InterPro; IPR002318; tRNA-synt_2c.
InterPro; IPR006193; tRNA_synt_Ala.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KVGDELELHIDVERRWLTMKNHSATHAL 610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FROM N.A.
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late Stage of Mitochondria Genes
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Last annotation updat
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01-MAY-2000
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Q9EPX9;
01-MAR-2001
01-MAR-2001
01-JUN-2003
                     Manduca sexta (Tobacco hawkmoth) (Tobacco hornworm).

Bukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Bndopterygota; Lepidoptera; Glossata; Ditrysia; Sphingiodea;
Sphingidae; Sphinginae; Manduca.

NCBI_TaxID=7130;
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VARIANT
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PROSITE; PS50860; AA TENA LIGASE_II_ALA;
Aminoacyl-tena thetase.

SEQUENCE 966 AA; 107877 MW; 82034A185
                                                                                                                      Amino acid transporter/amino
                                                                                                                                    01-MAY-2000
01-JUN-2003
                                                                                                                                                                                                                                                                                                                                                                                                            PROSITE; PS00287; CYSTATIN; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Neuron 28:385-397(2000).
EMBL; AF311741; AAG40283.1; -.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN=BALB/c;
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Mammalia; Eutheria;
 SEQUENCE FROM N.A.
                                                                                            CAATCH1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     autocrine/paracrine cofactor.";
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Pred. No. 1
7; Mismatch
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Pred. No. 2
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RESULT 14
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RA White O., Alonso J., Altafi H., Araujo R., Bowman C.L., Brooks S.Y.,
RA White O., Alonso J., Altafi H., Araujo R., Bowman C.L., Brooks S.Y.,
RA Buehler E., Chan A., Chao Q., Chen H., Cheuk R.F., Chin C.W.,
RA Dunn P., Btgu P., Feldblyum T.V., Feng J.-D., Fong B., Fujii C.Y.,
RA Dunn P., Btgu P., Feldblyum T.V., Feng J.-D., Fong B., Fujii C.Y.,
RA Gill J.E., Goldsmith A.D., Haas B., Hansen N.F., Hughes B., Huizar L.,
RA Kim C.J., Koo H.L., Kremenetskaia I., Kurtz D.B., Kwan A., Lam B.,
RA Kim C.J., Koo H.L., Kremenetskaia I., Kurtz D.B., Kwan A., Lam B.,
RA Langin-Hooper S., Liee A., Lee J.M., Lenz C.A., Li J.H., Li Y.-P.,
RA Lin X., Liu S.X., Liu Z.A., Luros J.S., Maiti R., Marziali A.,
Militscher J., Miranda M., Nguyen M., Nierman W.C., Osborne B.I.,
RA Militscher J., Miranda M., Nguyen M., Nierman W.C., Osborne B.I.,
RA Militscher J., Miranda M., Nguyen M., Rooney T., Rowley D.,
RA Sakano H., Salzerg S.L., Schwartz J.R., Shinn P., Southwick A.M.,
RA Sun H., Tallon L.J., Tambunga G., Torimi M.J., Town C.D.,
RA Sun H., Tallon L.J., Tambunga G., Torimi M.J., Town C.D.,
RA Wu D., Yu G., Fraser C.M., Venter J.C., Davis R.W.;
"Sequence and analysis of chromosome 1 of the plant Arabidopsis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
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01-JUN-2001
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PYODOM; PD000448; NA/NITAN SYMPORT; 1.
PROSITE; PS50267; NA NEUROTRAN SYMP 3; 1.
SEQUENCE 633 AA; 69934 MW; 597EDC58E98FDF1D
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                                                                                            EMBL; AC0516:
PIR; B96520;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN=cv. Columbia;
MEDLINE=21016719; PubMed=11130712;
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"A novel electrogenic amino acid transporter is activated
"A transporter and is Cl--independent.";

J. Biol. Chem. 275:24518-24526(2000).
                                                                                                                             Nature 408:816-820(2000).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Arabidopsis thaliana (Mouse-ear cress).
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MEDLINE=20387341; PubMed=10829035;
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12; Conserv
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(TrEMBLrel. 17, Last sequence update)
(TrEMBLrel. 24, Last annotation update)
   Conservative
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                  28.6%;
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Pred. No. 12;
3; Mismatches
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                                     Length 302;
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YHLNVEMQWTTCQKPETTNCVPQERE 33

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RESULT 15
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Q8LAU
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AC Q8LAU
DT 01-OC
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DT 01-OC
DE Eukar
OC Sperm
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RP 5EQUE
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Best Local Similarity 42.3
Matches 11; Conservative
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QBLAUB;
01-OCT-2002 (TrEMBLrel. 22, Created)
01-OCT-2002 (TrEMBLrel. 22, Last sequence update)
01-OCT-2002 (TrEMBLrel. 22, Last annotation update)
01-OCT-2002 (TrEMBLrel. 22, Last annotation update)
01-OCT-2002 (TrEMBLrel. 22, Last annotation update)
Dessication-related protein, putative.
Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnollophyta; eudicotyledons; core eudicots; rosids;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
NCBI TaxID-3702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

Haas B.J., Volfovsky N., Town C.D., Troukhan M., Alexandrov N., Feldmann K.A., Flavell R.B., White O., Salzberg S.L.;

"Full-length messenger RNA sequences greatly improve genome annotation.";

Genome Biol. 0:0-0(2002).
                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.

Brover V., Troukhan M., Alexandrov N., Lu Y.-P., Flavell R., Brover V., Troukhan M., Alexandrov N., Lu Y.-P., Flavell R., Brover V., Troukhan M., Alexandrov N., Lu Y.-P., Flavell R., Breedmann K.;

"Full-Length cDNA from Arabidopsis thaliana.";

Submitted (MAR-2002) to the EMBL/GenBank/DDBJ databases.

EMBL; AY087598; AAM65140.1; -.

SEQUENCE 315 AA; 34328 MW; 5AFFCA9D6391F715 CRC64;
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                                                                                                                          28.6%; Score 54; DB 10; Length 315; 42.3%; Pred. No. 9.6; tive 4; Mismatches 7; Indels
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Post-processing: Minimum Match 0%
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Perfect score:
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1: geneseqp1980s:*
2: geneseqp1990s:*
3: geneseqp2001s:*
4: geneseqp2001s:*
5: geneseqp2003as:*
6: geneseqp2003bs:*
7: geneseqp2003bs:*
8: geneseqp2004s:*
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SUMMARIES

Result No	S	Watch 100.0 100.0 100.0 100.0 100.0 93.4 93.4 93.4 93.4 93.4 93.4 93.4 93.4			ID AUT79863 AAUT79854 AAUT79852 AAUT79852 AAUT79860 AAUT7986
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ALIGNMENTS

Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer. Claim 2; Page 97-98; 100pp; English.

WPI; 2002-383044/41.

The invention describes an isolated mammalian cystatin-8 (Zcys8) polypeptide (I). (I) is useful for: inhibiting cancer proceagulant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm motility and fertilisation; and as antigenic peptides to generate antibodies. Zcys8 is useful as research reagent for characterising sites of interaction between Zcys8 and its receptor. Zcys8 is useful in enhancing fertilisation during assisted reproduction in humans and in animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy matterial in vitro for the presence of Zcys8. The antibodies are also useful to isolate large

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ID Query Match Best Local (Matches polypeptide (I). (I) is useful for: inhibiting cancer procoagliant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm motility and fertilisation, and as antigenic peptides to generate antibodies. Zcys8 is useful as research reagent for characterising sites of interaction between Zcys8 and its receptor. Zcys8 is useful in enhancing fertilisation during assisted reproduction in humans and in animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcys8 protein and DNA sequences that encode Zcys8 genes. The antibodies are also useful to isolate large quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes. The polynucleotide encoding (I) is useful to detect and to localise the expression of a Zcys8 gene in a biological sample and Zcys8 quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes. The polynucleotide encoding (I) is useful to detect and to localise the expression of a Zcys8 gene in a biological sample and Zcys8 cligonucleotide probes are useful for in vivo diagnosis. The polynucleotide encoding (I) is useful in determining whether a subject's polynucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zcys8 gene. Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer. Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sper Claim WPI; 2002-383044/41. 01-SEP-2000; 2000US-0230230P 29-AUG-2001; 2001WO-US026868 14-MAR-2002. WO200220567-A2 Homo sapiens Human cystatin-8 (Zcys8) antigenic fragment #1. 15-JUL-2002 AAU79853; AAU79853 standard; protein; 115 Sequence 49 AA; Holloway JL, This sequence represents an antigenic peptide of human cystatin-8 (Zcys8) (ZYMO) ZYMOGENETICS invention 2; Page 94; 100pp; English motility; fertilisation; antigenic fragment. 49; Similarity DQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPETTN DQYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPETTN Conservative (first entry) Gao Z, describes an isolated mammalian cystatin-8 (Zcys8) INC 100.0%; Bishop PD; are useful 0 Score 272; DB 5 Pred. No. 4e-30; B Mismatches DB 5; cryopreserved sperm; 0, Length Indels 49 49 0 Gaps 0

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RESULT 3
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                             fluid viscosity, enhancing viability of cryopreserved sperm, sperm motility and ferrilisation; and as antigenic peptides to generate antibodies. Zcys8 is useful as research reagent for characterising sites of interaction between Zcys8 and its receptor. Zcys8 is useful in enhancing fertilisation during assisted reproduction in humans and in animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcys8 protein and DNA sequences that encode Zcys8 genes. The polynucleotide encoding (I) is useful to detect and to localise the expression of a Zcys8 gene in a biological sample and Zcys8 oligonucleotide encoding (I) is useful to detect and to localise the polynucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation in the Zcys8 gene in a biological sample and zcys8 oligonucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation in the Zcys8 gene in a second contain a mutation in the Zcys8 gene in the Zcys8 gene in a second contain a mutation in the Zcys8 gene in the Zcy
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    (I) is useful for: inhibiting cancer procoagulant
individual and thus inhibiting the thrombotic events

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I). (I) is useful for: inhibiting cancer procoagula
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CC The invention describes an isolated mammalian cystatin-8 (Zcys8)
CC polypeptide (I). (I) is useful for: inhibiting cancer procoagulant
CC protein in an individual and thus inhibiting cancer procoagulant
CC control of the cancer; promoting spermatogenesis, modulating seminal
CC fluid viscosity, enhancing viability of cryopreserved sperm, sperm
CC motility and fertilisation; and as antigenic peptides to generate
CC antibodies. Zcys8 is useful as research reagent for characterising sites
CC of interaction between Zcys8 and its receptor. Zcys8 is useful in
CC enhancing fertilisation during assisted reproduction in humans and in
CC enhancing fertilisation during assisted reproduction in humans and in
CC enhancing fertilisation during assisted reproduction in humans and in
CC enhancing fertilisation and segment for solve and in
CC presence of Zcys8 protein and DNA sequences that encode Zcys8 genes.
CC polynucleotide encoding (I) is useful to detect and to localise the
CC expression of a Zcys8 gene in a biological sample and Zcys8 genes.
CC copy number charges, insertions, deletions, restriction site changes and
CC copy number charges, insertions, deletions, restriction site changes and
CC copy number changes, insertions, deletions, restriction site changes and
CC This is the amino acid sequence of human cystatin-8 (Zcys8) gene.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sper
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAU79852;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rearrangements and genetic alterations that inactivate the Zcys8 gene. This sequence represents an antigenic fragment of human cystatin-8 (Zcys8)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29-AUG-2001; 2001WO-US026868
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15-JUL-2002
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2; Page 93-94; 100pp; English
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%; Score 272; DB 5; 100.0%; Pred. No. 1.1e-29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bishop PD
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                                                                                             CC protein in an individual and thus inhibiting the thrombotic events
CC associated with cancer; promoting spermatogenesis, modulating seminal
CC fluid viscosity, enhancing viability of cryopreserved sperm, sperm
CC motility and fertilisation; and as antigenic peptides to generate
CC entibodies. Zeys8 is useful as research reagent for characterising sites
CC of interaction between Zcys8 and its receptor. Zcys8 is useful in
CC enhancing fertilisation during assisted reproduction in humans and in
CC enhancing fertilisation during assisted reproduction in humans and in
CC enhancing fertilisation during assisted reproduction in humans and in
CC enhancing fertilisation during assisted reproduction in humans and in
CC entered to the saliva, tissue biopsy and autopsy material in vitro for the
CC blood, urine, saliva, tissue biopsy and autopsy material in vitro for the
CC quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes.
CC The polynucleotide encoding (I) is useful to detect and to localise the
CC expression of a Zcys8 gene in a biological sample and Zcys8
CC oligonucleotide probes are useful for in vivo diagnosis. The
CC oligonucleotide encoding (I) is useful in determining whether a subject's
CC plynucleotide encoding (I) is useful in determining whether a subject's
CC plynucleotide encoding (I) is useful in determining whether a subject's
CC rearrangements and genetic alterations that inactivate the Zcys8 gene
CC rearrangements and genetic alterations that inactivate the Zcys8 gene
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The invention describes an isolated mammalian cystatin-8 (Zcys8)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 2; Page 98; 100pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2002-383044/41.
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                                                                   This sequence represents an antigenic peptide of human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           polypeptide (I)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29-AUG-2001; 2001WO-US026868
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Query Match

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The invention describes an isolated mammalian cystatin-8 (Zcys8) polypeptide (I). (I) is useful for: inhibiting cancer procoagulant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm motility and fertilisation; and as antigenic peptides to generate antibodies. Zcys8 is useful as research reagent for characterising sites of interaction between Zcys8 and its receptor. Zcys8 is useful in enhancing fertilisation during assisted reproduction in humans and in animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcys8 protein and DNA sequences that encode Zcys8 genes. The polynucleotide encoding (I) is useful to detect and to localise the
                                                                                                                                                                                                                                                        copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zcys8 gene. This sequence represents an antigenic peptide of human cystatin-8 (Zcys8)
                                                                                                                                                                                                                                                                                                                                             expression of a Zcys8 gene in a biological sample and Zcys8 oligonucleotide probes are useful for in vivo diagnosis. The polynucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation; antigenic peptide.
                                                                                                                                                                                                Sequence 46 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAU79860 standard; peptide; 46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2002-383044/41.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Holloway JL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-SEP-2000; 2000US-0230230P
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15-JUL-2002
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (ZYMO ) ZYMOGENETICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2; Page 97; 100pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cystatin-8
                                                                           46;
             4 NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPETTN 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 QYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPETTN
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                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPETTN
                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gao Z,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (Zcys8) antigenic fragment
                                                       93.4%; 50.
100.0%; Pre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bishop
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <u>.</u>
                                                                    Score 254; DB 5; I
Pred. No. 1.2e-27;
0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No. 4.9e-29; 

; Mismatches 0;
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                                                                                                                               Length 46
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                                                                                                                                                                                                                                                              (Zcys8)
                                                                    0
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KESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPETTN KESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPETTN Matches

45 σ

Conservative

Mismatches

49

Gaps

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ARBSULF 7
ARAUT9864
ID AAUT7
XX
AX
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                                                                                                                                                                                   The invention describes an isolated mammalian cystatin-8 (Zcys8)

CC polypeptide (I). (I) is useful for: inhibiting cancer procoagulant

CC protein in an individual and thus inhibiting the thrombotic events

CC associated with cancer; promoting spermatogenesis, modulating seminal

CC fluid viscosity, enhancing viability of cryopreserved sperm, sperm

CC motility and fertilisation; and as antigenic peptides to generate

CC antibodies. Zcys8 is useful as research reagent for characterising sites

CC of interaction between Zcys8 and its receptor. Zcys8 is useful in

CC enhancing fertilisation during assisted reproduction in humans and in

CC enhancing fertilisation during assisted reproduction in humans and in

CC enimals. Anti-(I) antibodies are useful to screen biological samples like

CC presence of Zcys8. The antibodies are also useful to isolate large

CC quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes.

CC The polynucleotide encoding (I) is useful to detect and to localise the

CC copy number changes, insertions, deletions, restriction site changes and

CC copy number changes, insertions, deletions, restriction site changes and

CC rise sequence represents an antigenic peptide of human cystatin-8 (Zcys8)
                            Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
                                                                                                                                  Sequence 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2002-383044/41.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-SEP-2000; 2000US-0230230P
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14-MAR-2002
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human cystatin-8 (Zcys8) antigenic fragment #12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (ZYMO ) ZYMOGENETICS INC
                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Page 98; 100pp; English.
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                                                                                                                                  AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 peptide;
                            91.2%;
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<u>,</u>
                            Score 248;
Pred. No.
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                            DB 5; 1
9.2e-27;
                                                        Length 52
Indels
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RESULT 8
AAUT9866
ID AAUT986
ID 
RESULT 9
AAU79862
ID AAU7
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CC polypeptide (I) (I) is useful for: inhibiting cancer procoagulant
CC protein in an individual and thus inhibiting the thrombotic events
CC associated with cancer; promoting spermatogenesis, modulating seminal
CC fluid viscosity, enhancing viability of cryopreserved sperm, sperm
CC motility and fertilisation; and as antigenic peptides to generate
CC antibodies. Zcys8 is useful as research reagent for characterising sites
CC of interaction between Zcys8 and its receptor. Zcys8 is useful in
CC enhancing fertilisation during assisted reproduction in humans and in
CC enhancing fertilisation during assisted reproduction in humans and in
CC enhancing fertilisation during assisted reproduction in humans and in
CC entimals. Anti-(I) antibodies are useful to screen biological samples like
Dlood, urine, saliva, tissue biopsy and autopsy material in vitro for the
CC presence of Zcys8. The antibodies are also useful to isolate large
CC publications of Zcys8 protein and DNA sequences that encode Zcys8 genes.
CC The polymucleotide encoding (I) is useful to detect and to localise the
CC polymucleotide probes are useful for in vivo diagnosis. The
CC polymucleotide probes are useful for in vivo diagnosis.
CC chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene
CC copy number changes, insertions, deletions, restriction site changes and
CC rearrangements and genetic alterations that inactivate the Zcys8 gene.
CC This sequence represents an antigenic peptide of human cystatin-8 (Zcys8)
                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                Matches
                         AAU79862 standard; peptide; 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAU79866;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15-JUL-2002 (first entry)
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                                                                                                                                                                                                                                                                          23
                                                                                                                                                                                                                                                                                                                                                                                    Similarity
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                                                                                                                                                                                                                                                 RQVTDHLEYHLNVEMQWTTCQKPETTN 49
                                                                                                                                                                                                            RQVTDHLEYHLNVEMQWTTCQKPETTN 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A
                                                                                                                                                                                                                                                                                                                                        56.6%; S llarity 100.0%; Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gao Z,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INC.
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                                                                                                                                                                                                                                                                                                                                        Score 154; DB 5;
Pred. No. 1.2e-13;
0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PD;
                                                                                                                                                                                                                                                                                                                                                                                                          Length 59;
                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                        Gaps
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RESULT 10
AAU79859
ID AAU79
XX
AC AAU79
XX
DT 15-JU
XX

AAU79859 standard; peptide; 27

15-JUL-2002

(first entry)

밁 S

,_

24 QVTDHLEYHLNVEMQWTTCQKPETTN 49

Matches

26;

Conservative

0; Mismatches

Indels

0

Gaps

0

2.9e-13;

Similarity

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cc protein in an individual and thus inhibiting the throughout an individual and thus inhibiting the throughout associated with cancer; promoting spermatogenesis, modulating seminal cfluid viscosity, enhancing viability of cryopreserved sperm, sperm comotility and fertilisation; and as antigenic peptides to generate contility and fertilisation; and as antigenic peptides to generate continuous permitters and in the receptor. Zcys8 is useful in cenhancing fertilisation during assisted reproduction in humans and in canimals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcys8 protein and DNA sequences that encode Zcys8 genes. The polynucleotide encoding (I) is useful to detect and to localise the cxpression of a Zcys8 gene in a biological sample and Zcys8 genes. Cc oligonucleotide encoding (I) is useful to detect and to localise the polynucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation in the Zcys8 gene like aneuploidy, gene copy number changes, insertions, deletions, restriction site changes and crearrangements and genetic alterations that inactivate the Zcys8 gene copy number changes and antigenic peptide of human cystatin-8 (Zcys8)
                                                             Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The invention describes an isolated mammalian cystatin-8 (Zcys8) polypeptide (I). (I) is useful for: inhibiting cancer procoagulant protein in an individual and thus inhibiting the thrombotic events
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
                                                             Sequence 33 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 2; Page 97; 100pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2002-383044/41.
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54.8%;
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Score 149;
Pred. No.
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                     DB 5;
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                   Length 33;
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Human

cystatin-8 (Zcys8) antigenic fragment #7.

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AAU79858
ID AAU7
XX
AC AAU7
XX
AC AAU7
XX
AC Huma
XX
CYBI
KW CYBI
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                                                                                                                                                                                                         RESULT 11
                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                            animals. Anti-(I) antibodies are useful to screen biological samples like blood, urine, saliva, tissue biopsy and autopsy material in vitro for the presence of Zcys8. The antibodies are also useful to isolate large quantities of Zcys8 protein and DNA sequences that encode Zcys8 genes. The polynucleotide encoding (I) is useful to detect and to localise the expression of a Zcys8 gene in a biological sample and Zcys8 oligonucleotide probes are useful for in vivo diagnosis. The polynucleotide encoding (I) is useful in determining whether a subject's chromosomes contain a mutation in the Zcys8 gene in being copy number changes, insertions, deletions, restriction site changes and rearrangements and genetic alterations that inactivate the Zcys8 gene. This sequence represents an antigenic peptide of human cystatin-8 (Zcys8)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           polypeptide (I). (I) is useful for: inhibiting cancer procoagulant protein in an individual and thus inhibiting the thrombotic events associated with cancer; promoting spermatogenesis, modulating seminal fluid viscosity, enhancing viability of cryopreserved sperm, sperm motility and fertilisation; and as antigenic peptides to generate antibodies. Zcys8 is useful as research reagent for characterising sit of interaction between Zcys8 and its receptor. Zcys8 is useful in enhancing fertilisation during assisted reproduction in humans and in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Novel isolated mammalian cystatin-8 polypeptide useful for promoting spermatogenesis, and inhibiting cancer procoagulant protein which leads to inhibition of thrombotic events associated with cancer.
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Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm;
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                                                      Human cystatin-8 (Zcys8) antigenic fragment #6.
                                                                                             15-JUL-2002
                                                                                                                                                                      AAU79858 standard; peptide; 35 AA
                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 27 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 2; Page 96; 100pp; English.
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                                                                                                                                                                                                                                                                                                                                         l Similarity
27; Conserv
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                                                                                                                                                                                                                                                               DQYNKESDDKYHFRIFRVLKVQRQVTD 27
                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                               (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                describes an isolated mammalian cystatin-8 (Zcys8)
                                                                                                                                                                                                                                                                                                                                 52.6%; Dr.
100.0%; Pr
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Pred. No. 1.6e-12;
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RESULT 12
AAUT9861
ID AAUT9
XX AAUT9
AC AAUT9
XX 15-JU
XX 15-JU
XX Eperm
XX Cysta
XW sperm
XX Sperm
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 27; Conserv
                                                              Cystatin-8; Zcys8; cancer; procoagulant protein; thrombosis; spermatogenesis; seminal fluid viscosity; cryopreserved sperm; sperm motility; fertilisation; antigenic peptide.
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                                                                                                                                                                                                  15-JUL-2002 (first entry)
                                                                                                                                                                                                                                                                                     AAU79861 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 35 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 2; Page 96; 100pp; English.
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                                                                                                                                                   Human cystatin-8
                                                                                                                                                                                                                                          AAU79861;
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                                                                                                                                                     (Zcys8) antigenic fragment
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100.0%;
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Pred. No.
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2.1e-12;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 24 AA;
30-JAN-2001; 2001WO-US000670
                                    09-AUG-2001.
                                                                    WO200157278-A2
                                                                                                       Homo sapiens.
                                                                                                                                                       Probe; human; microarray; gene expression; cervical epithelial cell;
                                                                                                                                                                                      Peptide #1530 encoded by probe
                                                                                                                                                                                                                          12-OCT-2001
                                                                                                                                                                                                                                                           AAM15096;
                                                                                                                                                                                                                                                                                           AAM15096 standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The invention describes an isolated mammalian cystatin-8 (Zcys8)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29-AUG-2001; 2001WO-US026868
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; Pred. No. 6.7e-12;
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                                                                                                                                                                                      for measuring cervical gene expression.
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RESULT 14
ABB34086
ID ABB34
XX ABB34
XX ABB34
XX ABB34
XX ABB34
XX Humar
XX Humar
XX Homo
OS Homo
PN WO200
PN WO200
PN WO201
PF 30-J1
PF 3
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                                                                                                             04-FEB-2000; 2000US-0180312P.
26-MAY-2000; 2000US-0207456P.
30-JUN-2000; 2000US-00608408.
03-AUG-2000; 2000US-00632366.
21-SEP-2000; 2000US-023687P.
27-SEP-2000; 2000US-0236359P.
04-OCT-2000; 2000US-0236359.
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26-MAY-2000; 2000US-0207456P.
30--UNN-2000; 2000US-00608408.
03-AUG-2000; 2000US-00632366.
21-SEP-2000; 2000US-0234687P.
27-SEP-2000; 2000US-02345359-
04-OCT-2000; 2000GB-00024263.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The present invention relates to human single exon nucleic acid probes (SENP: see AAI10068-AAI28459). The present sequence is a peptide encoded by one such probe. The SENPs are derived from human HeLa cells. The SENPs can be used to produce a single exon microarray, which can be used for measuring human gene expression in a sample derived from human cervical epithelial cells. By measuring gene expression, the probes are therefore useful in grading and/or staging of diseases of the cervix, notably cervical cancer. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           04-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABB34086;
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     Penn SG,
                                                                                                                                                                                                                                                                                                                                            30-JAN-2001; 2001WO-US000669
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human; foetal liver; gene expression; single exon nucleic acid probe.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Peptide #1592 encoded by human foetal liver single exon probe
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                                                           (MOLE-)
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                                                           MOLECULAR DYNAMICS INC
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     Hanzel DK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQ ID
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rive 0; Mismatches
     Chen W,
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Pred. No.
     Rank DR;
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04-FEB-2000; 2000US-0180312P.
26-MAY-2000; 2000US-0207456P.
30-JUN-2000; 2000US-00608408.
03-AUG-2000; 2000US-00632366.
21-SEP-2000; 2000US-0234687P.
27-SEP-2000; 2000US-0234559-
04-OCT-2000; 2000GB-00024263.
         The present invention relates to single exon nucleic acid probes (SENP: see AAI31315-AAI57546). The present sequence is a peptide encoded by on such probe. The probes are useful for producing a microarray for predicting, measuring and displaying gene expression in samples derived
                                                                                           Human genome-derived single exon nucleic acid probes useful for analyzing gene expression in human placenta.
                                                                                                                                                                                                                                                                                                                         09-AUG-2001.
                                                                       Claim 27;
                                                                                                                              WPI; 2001-488897/53.
                                                                                                                                                       Penn
                                                                                                                                                                                                                                                                                                 30-JAN-2001; 2001WO-US000663
                                                                                                                                                                                                                                                                                                                                                WO200157272-A2
from human placenta.
                                                                                                                                                                               (MOLE-)
                                                                                                                                                       SG,
                                                                                                                                                                             MOLECULAR DYNAMICS INC
                                                                      SEQ ID NO 27814; 654pp; English.
                                                                                                                                                     Hanzel DK,
The probes are useful for antenatal diagnosis of
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                                                                                                                                                       Rank DR;
                                  by one
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Query Match
Best Local S
Matches 24
                                                                                                                                                                                                                                              The invention relates to a single exon nucleic acid probe for measuring human gene expression in a sample derived from human foetal liver. The single exon nucleic acid probes may be used for predicting, measuring and displaying gene expression in samples derived from human fetal liver. The present sequence is a peptide encoded by a single exon nucleic acid probe of the invention. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIFO at ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                    Sequence 50 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 27; SEQ ID NO 26721; 639pp + Sequence Listing; English
27
                                                                                                  24;
                             1 DQYNKESDDKYHFRIFRVLKVQRQ 24
                                                                                                                         Similarity
DOYNKESDDKYHFRIFRVLKVORO 50
                                                                                                  Conservative
                                                                                    47.1%; but
100.0%; Pr
                                                                                            Score 128; DB 4; L
s; Pred. No. 3.9e-10;
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Human genome-derived single exon nucleic acid probes useful for analyzing gene expression in human fetal liver.

WPI; 2001-483447/52

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RESULT 15
AAM27545
                                                                                                                                                                                             AAM27545 standard; protein; 50
genetic disorder.
                  Probe; microarray; human; placenta; antenatal diagnosis;
                                                             Peptide #1582 encoded by probe for measuring placental gene expression.
                                                                                                        17-OCT-2001
                                                                                                                                                    AAM27545;
                                                                                                        (first entry)
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Homo sapiens

SXS Sequence 50 human genetic disorders AA;

Query Match Best Local & Matches 24; Conservative Similarity 47.1%; Score 128; I 100.0%; Pred. No. 3 0 Mismatches DB 4; 3.9e-10 Length 0 Gaps

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Search completed: March Job time: 44.4306 secs 18, 2004, 14:15:00

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Result
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Maximum
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Maximum Match 100%
Listing first 45 summaries
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Perfect score:
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     Query
Match
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1: /cgn2_6/ptodata/2/iaa/5A_COMB.pep:*

2: /cgn2_6/ptodata/2/iaa/5B_COMB.pep:*

3: /cgn2_6/ptodata/2/iaa/6A_COMB.pep:*

4: /cgn2_6/ptodata/2/iaa/FCTUS_COMB.pep:*

5: /cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*

6: /cgn2_6/ptodata/2/iaa/backfiles1.pep:*
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272
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                                 US-09-431-480-4
US-09-617-302-2
US-09-431-480-2
US-09-617-302-2
US-09-617-303-19
US-09-61849-303-19
US-09-6186-313PA-48
US-09-617-302-5
US-09-617-302-5
US-09-617-302-16
US-09-775-932-16
US-08-849-303-16
US-09-775-932-2
US-08-849-303-16
US-09-775-932-2
US-09-775-932-2
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US-09-775-932-2
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US-09-775-932-2
US-09-775-932-2
US-08-791-522-3
US-09-019-485-4
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Sequence 46, Appl
Sequence 48, Appli
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US-09-617-302-4
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US-09-431-480-4
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ALIGNMENTS

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EARLIER APPLICATION NUMBER: 60/109,217
EARLIER FILING DATE: 1998-11-20
EARLIER FILING DATE: 1998-09-28
EARLIER FILING DATE: 1999-09-28
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FASTSEQ for Windows Version 3.0
SEQ ID NO 4
LENGTH: 142
TYPE: PAT
ORGANISM: Homo sapiens
US-09-431-480-4
CURRENT APPLICATION NUMBER: US/09/617,302
CURRENT FILING DATE: 2000-07-17
PRIOR APPLICATION NUMBER: 09/431,480
PRIOR FILING DATE: 1999-11-01
PRIOR APPLICATION NUMBER: 60/109,217
PRIOR FILING DATE: 1998-11-20
PRIOR APPLICATION NUMBER: 60/156,382
PRIOR APPLICATION NUMBER: 60/156,382
PRIOR FILING DATE: 1999-09-28
NUMBER OF SEQ ID NOS: 22
                                                                                                                                                                                                                                                                                                 Sequence 4, Application US/09617302
Patent No. 6245529
GENERAL INFORMATION:
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APPLICANT: Feldhaus, Andrew
TITLE OF THE STATIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN T
FILE REFERENCE: 98-72
CURRENT APPLICATION NUMBER: US/09/431,480
CURRENT FILING DATE: 1999-11-01
                                                                                                                                                                                                 APPLICANT: Holloway, James L.

APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN
FILE REFERENCE: 98-72 C1
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50.0%;
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Pred. No. 4.2e-11;
2; Mismatches 12
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; ORGANISM: Homo sapiens US-09-617-302-2
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                                                                                                                            CURRENT FILING DATE: 199-01-21
PRIOR APPLICATION NUMBER: 09/431,480
PRIOR APPLICATION NUMBER: 09/431,480
PRIOR FILING DATE: 1999-11-01
PRIOR APPLICATION NUMBER: 60/109,217
PRIOR APPLICATION NUMBER: 60/109,217
PRIOR FILING DATE: 1998-11-20
PRIOR APPLICATION NUMBER: 60/156,382
PRIOR FILING DATE: 1999-09-28
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LENGTH: 14:
TYPE: PRT
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Patent No. 6235708
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
TOTAL
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE
FILE REFERENCE: 98-72
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LENGTH: 141
                                                                                    SEQ ID NO 2
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CURRENT FILING DATE: 1999-11-01
EARLIER APPLICATION NUMBER: 60/109,217
EARLIER FILING DATE: 1998-11-20
EARLIER APPLICATION NUMBER: 60/156,382
EARLIER FILING DATE: 1999-09-28
                                                                                                                                                                                                                                                                                                                                     APPLICANT: Holloway, James L.
APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE
FILE REFERENCE: 98-72 C1
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SOFTWARE: FastSEQ for Windows Version 3.0
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                                            TYPE: PRT
                                                               LENGTH: 141
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Local Similarity 51.2%;
les 22; Conservative
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Pred. No. 2.3e-10;
9; Mismatches 12
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                                                                                                                                                              US-09-617-302-3
                                                                                                                                                                                                                                                                                               CURRENT APPLICATION NUMBER: US/09/617,302
CURRENT FILING DATE: 2000-07-17
PRIOR APPLICATION NUMBER: 09/431,480
PRIOR FILING DATE: 1999-11-01
PRIOR APPLICATION NUMBER: 60/109,217
PRIOR APPLICATION NUMBER: 60/156,382
PRIOR APPLICATION NUMBER: 60/156,382
PRIOR FILING DATE: 1999-09-28
PRIOR FILING DATE: 1999-09-28
                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Holloway, James L.
APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN
TITLE OF INVENTION: 185/109/617,302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-617-302-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 3, Application US/09617302
Patent No. 6245529
GENERAL INFORMATION:
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Best Local (
                                                                               Matches
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                                                                                                 Query Match
Best Local
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                                                                                                                                                                                                                                                              NUMBER OF SEQ ID NOS:
SOFTWARE: FastSEQ for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Holloway, James L.
APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE
FILE REFERENCE: 98-72
                                                                                                                                                                              TYPE: PRT
ORGANISM: Mus musculus
                                                                                                                                                                                                                    LENGTH: 142
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                                                                                               ocal Similarity
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                        QYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKP 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKP 45
  EYNKESEDKYVFLVDKILHAKLQITDRMEYQIDVQISRSNCKKP 98
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                                                                          Score 120; DB 3; L
Pred. No. 4.5e-10;
wigmatches 11;
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Pred. No. 2.3e-10;
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TOPOLOGY: lines;
MOLECULE TYPE: p1
HYPOTHETICAL: NO
US-08-849-303-19
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Matches
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                                                                                                                                                                                                                                                                                             Sequence 46, Application US/09886319A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                         APPLICANT: Werner, Sabine
APPLICANT: Halle, Jorn-Peter
APPLICANT: Regenbogen, Johannes
APPLICANT: Regenbogen, Johannes
TITLE Goppelt, Andreas
TITLE OF INVENTION: Use of Polypeptides or Nucleic Acids for
TITLE OF INVENTION: the bisgnosis or Treatment of Skin Disorders and Wound
TITLE OF INVENTION: Healing and for the Identification of Pharmacologically
TITLE OF INVENTION: Active Substances
TILE REFERENCE: 50125/014002
                                                                                                                                                                                                                                                                                                                                      -09-886-319A-46
                                                                                                                                                                                                       APPLICANT: Wolf, Eckard
APPLICANT: Werner, Sab
APPLICANT: Halle, Jorn
CURRENT APPLICATION NUMBER: US/09/886,319A
CURRENT FILING DATE: 2001-06-20
PRIOR APPLICATION NUMBER: US 60/222,081
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SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTORNEY/AGENT INFORMATION:
NAME: Jackson Esq., David A.
REGISTRATION NUMBER: 26,742
REFERENCE/DOCKET NUMBER: 1321-1-003
TELECOMMUNICATION INFORMATION:
TELEPHONE: 201-487-5800
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
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MEDIUM TYPE: Floppy
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE OF INVENTION: MODIFIED PROTEINASE INHIBITORS NUMBER OF SEQUENCES: 79
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Urwin, Peter E.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US/08/849,303
FILING DATE: 21-MAY-1997
CLASSIFICATION: 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE: Klauber & Jackson
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                                                                                                                                                                                                                                                                                                                                                                                                                     40 EYNKGSNDAYHSRAIQVVRARKQLVAGINYYLDVEMGRTTCTKSQT 85
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20; Conserv
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APPLICANT: Werner, Sabine
APPLICANT: Halle, Jorn-Peter
APPLICANT: Regenbogen, Johannes
APPLICANT: Regenbogen, Johannes
APPLICANT: Goppelt, Andreas
TITLE OF INVENTION: Use of Polypeptides or Nucleic Acids for
TITLE OF INVENTION: the Diagnosis or Treatment of Skin Disorders and Wound
TITLE OF INVENTION: Healing and for the Identification of Pharmacologically
TITLE OF INVENTION: Active Substances
FILE REFERENCE: 50125/014002
CURRENT APPLICATION NUMBER: US/09/886,319A
CURRENT FILING DATE: 2001-06-20
PRIOR APPLICATION NUMBER: US 60/222,081
PRIOR APPLICATION NUMBER: US 60/222,081
PRIOR APPLICATION NUMBER: US 60/222,081
PRIOR FILING DATE: 2000-08-01
PRIOR FILING DATE: 2000-06-20
NUMBER OF SEQ ID NOS: 84
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US-09-886-319A-48
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                                                                                                                                                                                                                                                                                                                     US-09-431-480-5
                                                                                                                                         Sequence 5, Application US/09431480
Patent No. 6235708
GENERAL INFORMATION:
APPLICANT: Holloway, James L.
APPLICANT: Feldhaus, James L.
APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN
FILE REFERENCE: 98-72
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SEQ ID NO 48
LENGTH: 140
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CURRENT APPLICATION NUMBER: US/09/431,480 CURRENT FILING DATE: 1999-11-01 EARLIER APPLICATION NUMBER: 60/109,217 EARLIER FILING DATE: 1998-11-20 EARLIER APPLICATION NUMBER: 60/156,382 EARLIER FILING DATE: 1999-09-28
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PRIOR FILING DATE: 2000-06-20
NUMBER OF SEQ ID NOS: 84
SOFTWARE: FastSEQ for Windows Version 4.0
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APPLICANT: Werns
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               / Match 39.7%; Score 108; DB 4; Cocal Similarity 43.5%; Pred. No. 2.6e-08; DB 20; Conservative 11; Mismatches 15;
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Query Match
Best Local Similarity
Matches 19; Conserve
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Patent No. 6245529
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                    Sequence 18, Application US/08849303 Patent No. 6680424
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SEQ ID NO 5
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LENGTH: 1
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                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
APPLICANT: Atkinso
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PRIOR FILING DATE: 1999-0
NUMBER OF SEQ ID NOS: 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION NUMBER: US/09/617,302
CURRENT FILING DATE: 2000-07-17
CURRENT FILING DATE: 09/431,480
PRIOR FILING DATE: 1999-11-01
PRIOR APPLICATION NUMBER: 60/109,217
PRIOR FILING DATE: 1998-11-20
PRIOR FILING DATE: 1998-11-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQ ID NOS: 22 SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Holloway, James L.
APPLICANT: Feldhaus, Andrew
TITLE OF INVENTION: TESTIS SPECIFIC CYSTATIN-LIKE PROTEIN CYSTATIN T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: PRT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM: Mus musculus
           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                            APPLICANT: McPherson, Michael J. APPLICANT: Urwin, Peter E. TITLE OF INVENTION: MODIFIED PRONUMBER OF SEQUENCES: 79
                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
                                                                                                                         STATE:
                                                                                                 COUNTRY:
                                                                                                                                          CITY: Hackensack
                                                                                                                                                         STREET:
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411 Hackensack Avenue, 4th Floor
                                                                                                       USA
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PatentIn Release #1.0,
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41.3%; Pred. No. 1e-07;
htive 11; Mismatches
                                                                                                                                                                                                                               MODIFIED PROTEINASE INHIBITORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  38.2%; Score 104; DB 3; Length 140; 41.3%; Pred. No. 1e-07;
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Version #1.30
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 140 amin
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                                                                                                                      INFORMATION FOR SEQ ID NO:
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                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: PATEN: PC-DOS/MS-DOS
SOFTMARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION DATA:
APPLICATION UMBER: US/08/849,303
FILING DATE: 21-MAY-1997
CLASSIFICATION: 514
CCASSIFICATION: 514
                                                                   SEQUENCE CHARACTERISTICS:
LENGTH: 112 amino acids
TYPE: amino acid
                                                                                                                                                                                                         ATTORNEY/AGENT INFORMATION:
NAME: Jackson Esq., David A.
REGISTRATION NUMBER: 26,742
REFERENCE/DOCKET NUMBER: 1321-1-003
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STREET: Hackensack
CITY: New Jersey
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CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES:
CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: McPherson, Michael J. APPLICANT: Urwin, Peter E.
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                                                                                                                                                                       TELECOMMUNICATION INFORMATION: TELEPHONE: 201-487-5800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION:
     HYPOTHETICAL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity 41.3
nes 19; Conservative
                                     TOPOLOGY:
                                                   STRANDEDNESS:
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21-MAY-1997
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41.3%; Pred. No. 1e-07;
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FILE REFERENCE: 58069

CURRENT APPLICATION NUMBER: US/09/775,932

CURRENT FILING DATE: 2001-02-02

PRIOR APPLICATION NUMBER: CA99/00717

PRIOR FILING DATE: 1999-08-05

PRIOR APPLICATION NUMBER: 60/095,503

PRIOR FILING DATE: 1998-08-05

PRIOR PILING DATE: 1998-08-05

SOFTWARE: Patentin Ver. 2.0

SEQ ID NO 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 15
US-09-775-932-24
; Sequence 24, Application US/09775932
; Patent No. 6534477
; GENERAL INFORMATION:
; APPLICANT: University of British Columbia
; APPLICANT: University of British Columbia
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                                                                                                                                                                        LENGTH: 118
; TYPE: PRT
; ORGANISM: Bos taurus
US-09-775-932-24
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; TYPE: PRT
; ORGANISM: Gallus sp.
US-09-775-932-16
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US-09-775-932-16
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Patent No. 6534477
GENERAL INFORMATION:
APPLICANT: University of British Columbia
TITLE OF INVENTION: Production and use of Modified Cystatins
FILE REFERENCE: 58069
                                                                                Query Match 37.9%; Score 103; DB 4; Length 118; Best Local Similarity 40.0%; Pred. No. 1.2e-07; Matches 18; Conservative 12; Mismatches 15; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 37.9%; Score 103; DB 4; Length 116; Best Local Similarity 44.2%; Pred. No. 1.1e-07; Matches 19; Conservative 10; Mismatches 14; Indels
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SEQ ID NO 16
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CURRENT FILING DATE: 2001-02-02
PRIOR APPLICATION NUMBER: CA99/00717
PRIOR FILING DATE: 1999-08-05
PRIOR APPLICATION NUMBER: 60/095,503
PRIOR FILING DATE: 1998-08-05
PRIOR FILING DATE: 1998-08-05
NUMBER OF SEQ ID NOS: 32
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32 EFNKRSNDAYQSRVVRVVRARKQVVSGMNYFLDVELGRTTCTKSQ 76
                        PatentIn Ver. 2.0
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Result
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Perfect score:
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seg length: 2000000000
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Match
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1: /cgn2_6/ptodata/2/pubpaa/PCT_2: /cgn2_6/ptodata/2/pubpaa/PCT_2
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Listing first 45 summaries
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/cgn2_6/ptodata/2/pubpaa/US09B_PUBCOMB.pep:*
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/cgn2_6/ptodata/2/pubpaa/US10B_PUBCOMB.pep:*
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6/ptodata/2/pubpaa/US08_NEW_PUB.pep:*
6/ptodata/2/pubpaa/US08_PUBCOMB.pep:*
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6/ptodata/2/pubpaa/US06_NEW_PUB.pep:*
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US-09-941-314-2

US-09-941-314-15

US-09-941-314-16

US-09-941-314-16

US-09-941-314-16

US-09-941-314-12

US-09-941-314-9

US-09-941-314-9

US-09-941-314-9

US-09-941-314-9

US-09-941-314-11

US-09-941-314-11

US-09-864-761-34822

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Sequence 3, Appli
Sequence 4, Appli
Sequence 2, Appli
Sequence 15, Appl
Sequence 14, Appl
Sequence 16, Appl
Sequence 16, Appl
Sequence 9, Appli
Sequence 9, Appli
Sequence 9, Appli
Sequence 9, Appli
Sequence 11, Appl
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Sequence
                  34822,
48936,
Appli
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ALIGNMENTS

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Sequence 13 Application US/09941314

Patent No. US20020142396A1

GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein FILE REFERENCE: 00-81PC

CURRENT APPLICATION NUMBER: US/09/941,314

CURRENT FILING DATE: 2001-08-29

PRIOR APPLICATION NUMBER: 60/230,230

PRIOR RIPLING DATE: 2001-09-01

NUMBER OF SEQ ID NOS: 19

SOCTWARE: FastSEQ for Windows Version 4.0

SEQ ID NO 13

LENGTH: 49

TYPE: PAT

ORGANISM: Homo sapiens

US-09-941-314-13
                                                                                                                               RESULT 2
US-09-941-314-3
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Sequence 3, Application US/09941314
Patent No. US20020142396A1
GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
                                                                                                                                                                                                                                                                                                                    Query Match 100.0%;
Best Local Similarity 100.0%;
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Pred. No. 7.2e-29;
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; LENGTH: 137
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-941-314-2
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APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
FILE REFERENCE: 00-81PC
                                                                                                                                                                                                                                            GENERÂL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its
TITLE OF INVENTION: Inhibit Cancer Procoagulant
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Best Local S
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Patent No. US20020142396A1
                                                                                  SEQ ID NO 2
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                                                                                                                         TITLE OF INVENTION: Inhibit Cancer Procoagulant FILE REFERENCE: 00-81PC CURRENT APPLICATION NUMBER: US/09/941,314 CURRENT FILING DATE: 2001-08-29 PRIOR APPLICATION NUMBER: 60/230,230 PRIOR PILING DATE: 2001-09-01 PRIOR PILING DATE: 2001-09-01 NUMBER OF SEQ ID NOS: 19
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CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
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PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
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CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
                                                                                                          SOFTWARE: FastSEQ for Windows Version 4.0
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TYPE: PRT
ORGANISM: Homo sapiens
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US-09-941-314-14
                RESULT 7
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US-09-941-314-15
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US-09-941-314-10
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APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
FILE REFERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
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Matches
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Patent No. US20020142396A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                     NUMBER OF SEQ ID NOS: 19
SOFTWARE: FRANSEQ for Windows Version 4.0
SEQ ID NO 10
LENGTH: 46
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SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 15
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Best Local :
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CURRENT FILLING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Zymodenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
FILE REFERENCE: 00-81PC
                                                                                                                                                                                                                                                      TYPE: PRT
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nes 46; Conserv
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                                                                     NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPETTN
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100.0%; Pred. No. 2.3e-28;
tive 0; Mismatches 0;
                                                                                                                                         93.4%; Score 254; DB 9; L
100.0%; Pred. No. 1.7e-26;
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                                                                                                                                                                               Length 46;
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Sequence 14, Application US/09941314 Patent No. US20020142396A1

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FILE REFERENCE: 00-81PC
CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOPTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 14
LENGTH: 52
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; ORGANISM: Homo sapiens
US-09-941-314-16
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US-09-941-314-16
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 16
                                                            GENERAL INFORMATION:

APPLICANT: ZymoGenetics, Inc.

TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to

TITLE OF INVENTION: Inhibit Cancer Proceagulant Protein

FILE REFERENCE: 00-81PC

CURRENT APPLICATION NUMBER: US/09/941,314

CURRENT FILING DATE: 2001-08-29

PRIOR APPLICATION NUMBER: 60/230,230

PRIOR PILING DATE: 2001-09-01

NUMBER OF SEQ ID NOS: 19
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Patent No. US20020142396A1
GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
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Matches
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Patent No. US20020142396A1
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Best Local Similarity
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APPLICANT: ZymoGenetics, Inc.
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SOFTWARE: FastSEQ for Windows Version 4.0 BQ ID NO 12 LENGTH: 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 59
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100.0%; Pr
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; Pred. No. 1.2e-25;
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Sequence 9, Application US/09941314

Patent No. US20020142396A1

GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
ITILE OF INVENTION: Mammalian Cystatin-8 and Its Use to TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein FILE REFERENCE: 00-81PC

CURRENT APPLICATION NUMBER: US/09/941,314

CURRENT FILING DATE: 2001-08-29

PRIOR APPLICATION NUMBER: 60/230,230

PRIOR APPLICATION DATE: 2001-09-01

NUMBER OF SEQ ID NOS: 19

SOFTWARE: FastSEQ for Windows Version 4.0

SEQ ID NO 9

LEVERN 2002-09-01
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US-09-941-314-9
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; ORGANISM: Homo sapiens
US-09-941-314-12
                                                                                                                                                                                                                                                                                LENGTH: 35
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-941-314-8
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US-09-941-314-8
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Patent No. US20020143396A1
GENERAL INFORMATION:
APPLICANT: ZymoGenetics, Inc.
TITLE OF INVENTION: Mammalian Cystatin-8 and Its Use to
TITLE OF INVENTION: Inhibit Cancer Procoagulant Protein
FILE REFERENCE: 00-81PC
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-09-01
PRIOR FILING DATE: 2001-09-01
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Best Local Similarity
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TYPE: PRT
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mes 26; Conserv
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DOYNKESDDKYHFRIFRVLKVQRQVTD 35
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100.0%; Pred. No. 5.7e-1
tive 0; Mismatches
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LENGTH: 24
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Pattent No. US2002014239611
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CURRENT APPLICATION NUMBER: US/09/941,314
CURRENT FILING DATE: 2001-08-29
PRIOR APPLICATION NUMBER: 60/230,230
PRIOR FILING DATE: 2001-09-01
NUMBER OF SEQ ID NOS: 19
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TITLE OF INVENTION: Mammalian Cystatin-8 and Its
TITLE OF INVENTION: Inhibit Cancer Procoagulant
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PRIOR FILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: US 09/632,366
PRIOR FILING DATE: 2000-08-03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CURRENT APPLICATION NUMBER: US/09/864,761
CURRENT FILING DATE: 2001-05-23
PRIOR APPLICATION NUMBER: US 60/180,312
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: GB 24263.6 FILING DATE: 2000-10-04 APPLICATION NUMBER: US 60/236,359
                                                                      FILING DATE: 2001-01-30
APPLICATION NUMBER: PCT/US01/00663
FILING DATE: 2001-01-30
                                                                                                                                                                                                            FILING DATE: 2001-01-30
APPLICATION NUMBER: PCT/US01/00669
                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: PCT/US01/00666 FILING DATE: 2001-01-30
                                  APPLICATION NUMBER: PCT/US01/00662
FILING DATE: 2001-01-30
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APPLICATION NUMBER: PCT/US01/00665
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                APPLICATION NUMBER: PCT/US01/00661
                                                                                                                                                     FILING DATE:
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o. US20020048763A1
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I: Chen, Wensheng
I: Chen, Wensheng
INVENTION: HUMAN GENOME-DERIVED SINGLE EXON NUCLEIC ACID PROBES USEFUL
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Hanzel, David K.
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2001-01-30
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Pred. No. 2.3e-11;
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RESULT 14
US-09-864-761-48936
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OTHER INFORMATION:
US-09-864-761-34822
                             PRIOR APPLICATION NUMBER: GB 24263.6
PRIOR FILING DATE: 2000-10-04
PRIOR PPLICATION NUMBER: US 60/236,359
PRIOR APPLICATION NUMBER: DCT/US01/00666
PRIOR APPLICATION NUMBER: PCT/US01/00666
PRIOR APPLICATION NUMBER: PCT/US01/00667
PRIOR APPLICATION NUMBER: PCT/US01/00667
PRIOR FILING DATE: 2001-01-30
PRIOR APPLICATION NUMBER: PCT/US01/00664
PRIOR APPLICATION NUMBER: PCT/US01/00664
PRIOR APPLICATION NUMBER: PCT/US01/00669
PRIOR APPLICATION NUMBER: PCT/US01/00669
PRIOR FILING DATE: 2001-01-30
PRIOR FILING DATE: 2001-01-30
PRIOR FILING DATE: 2001-01-30
                                                                                                                                                                                                                                                                       CURRENT APPLICATION NUMBER: US/09/864,761
CURRENT FILING DATE: 2001-05-23
PRIOR APPLICATION NUMBER: US 60/180,312
PRIOR FILING DATE: 2000-02-04
PRIOR APPLICATION NUMBER: US 60/207,456
PRIOR FILING DATE: 2000-05-26
PRIOR FILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: US 09/632,366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                          FILE REFERENCE: Aeomica-X-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE OF INVENTION: HUMAN GENOME-DERIVED SINGLE EXON NUCLEIC ACID PROBES USEFUL TITLE OF INVENTION: GENE EXPRESSION ANALYSIS BY MICROARRAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQ ID NOS: 49117
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TYPE: PRT
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OTHER INFORMATION:
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APPLICATION NUMBER: US 60/234,687
FILING DATE: 2000-09-21
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R INFORMATION: 1
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                APPLICATION NUMBER: PCT/US01/00665
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Hanzel, David K.
Chen, Wensheng
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D IN FETAL LIVER, SIGNAL = 1
D IN F474, SIGNAL = 1.5
D IN HEART, SIGNAL = 1.5
D IN HELA, SIGNAL = 1.3
D IN HELA, SIGNAL = 1.3
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HIT: AI200857.1, EVALUE 5.00
HIT: O60676, EVALUE 1.00e-01
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Pred. No. 1
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BRAIN, SIGN
PLACENTA,
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857.1, EVALUE 5.00e-23
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1.1e-09;
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CURRENT APPLICATION NUMBER: US/09/740,638
CURRENT FILING DATE: 2000-12-18
NUMBER OF SEQ ID NOS: 13
SOFTWARE: FASTSEQ for Windows Version 3.0
SEQ ID NO 2
LENGTH: 145
TYPE: PRT
ORGANISM: Homo sapiens
US-09-740-638-2
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OTHER INFORMATION: EXPRESSED IN BT474, SIGNAL = 0.96
OTHER INFORMATION: EST_HUMAN HIT: AI200857.1, EVALUE 5.00e-23
OTHER INFORMATION: SWISSPROT HIT: O60676, EVALUE 1.00e-01
US-09-864-761-48936
Search completed: March 18, 2004, 14:30:54 Job time: 29.6528 secs
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US-09-740-638-2
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PRIOR APPLICATION NUMBER: PCT/US01/00663
PRIOR APPLICATION NUMBER: PCT/US01/00662
PRIOR FILING DATE: 2001-01-30
PRIOR FILING DATE: 2001-01-30
PRIOR PILING DATE: 2001-01-30
PRIOR PILING DATE: 2001-01-30
PRIOR PILING DATE: 2001-01-30
PRIOR PRILING DATE: 2001-01-30
PRIOR PPLICATION NUMBER: PCT/US01/00670
PRIOR APPLICATION NUMBER: US 60/234,687
PRIOR PILING DATE: 2000-09-21
PRIOR PILING DATE: 2001-01-29
NUMBER OF SEQ ID NOS: 49117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 2, Application US/09740638
Patent No. US20020006656A1
GENERAL INFORMATION:
APPLICANT: HOLIOWAY, James L.
TITLE OF INVENTION: ZCY95: A Member of the Cystatin TITLE OF INVENTION: Superfamily
FILE REFERENCE: 99-104
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SEQ ID NO 48936
LENGTH: 50
TYPE: PRT
ORGANISM: Homo sapiens
FEATURE:
FEATURE:
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Best Local Similarity 40.4%;
Matches 19; Conservative 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 47.1%; Score 128; DB 9; I Best Local Similarity 100.0%; Pred. No. 1.1e-09; Matches 24; Conservative 0; Mismatches 0;
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                                                                                                                                                   3 YNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPETTN 49
                                                                                                                                                                                                           k; Score 114; DB 9; Length 14k; Pred. No. 2.8e-07;15; Mismatches 13; Indels
                                                                                                                                                                                                                                                              Length 145;
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Maximum Match 100%
Listing first 45 summaries
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Perfect score:
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 Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
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90
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length: 2000000000
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272
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GenCore version 5.1.6 (c) 1993 - 2004 Compugen Ltd
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A47702
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55.5	55.5	55.5	55.5	56	56	56	56	56.5	57	57.5	57.5	58	58.5	58.5	59
20.4	20.4	20.4	20.4	20.6	20.6	20.6	20.6	20.8	21.0	21.1	21.1	21.3	21.5	21.5	21.7
527	527	527	164	617	588	588	200	483	288	1585	428	47	382	246	644
N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	_
G64818	G85590	E90740	T31026	S19254	A99717	C95252	I46051	861975	T04401	T19121	A45568	862326	G90540	H90539	KGHUH1
probable membrane	probable enzyme yb	probable enzyme [i	hypothetical prote	nitrate reductase	L-fucose isomerase	L-fucose isomerase	secreted phosphopr	glutathione-disulf	endonuclease (EC 3	probable protein-t	highly immunoreact	cystatin C, paroti	hypothetical prote	ABC transporter at	kininogen, HMW pre

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cystatin C - C;Species: Ra C;Date: 21-No
                                                                                                                                                                                                                                     C.Species: Rattus sp. (rat)
C.Date: 21-Nov-1993 #sequence_revision 03-Nov-1995 #text_change 16-Jul-1999
C.Accession: S10587
C.Accession: S10587
R.Esnard, F.; Esnard, A.; Faucher, D.; Capony, J.P.; Derancourt, J.; Brillard, M.; Gauth: Biol. Chem. Hoppe-Seyler 371(Suppl.), 161-166, 1990
A;Title: Rat Cystatin C: the complete amino acid sequence reveals a site for N-glycosylat A;Reference number: S10587; MUID:90380276; PMID:2400577
A;Accession: S10587
                                                                             A;Note: 43-Asn was also found
A;Note: the sequence from Fig. 2 is inconsistent with that C;Superfamily: cystatin; cystatin homology
F;9-120/Domain: cystatin homology <CYS>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Cross-references: GB:S49926; NID:g260492; PIDN:AAC35390.1; PID:g260493; A;Note: sequence extracted from NCBI backbone (NCBIP:118813) C;Superfamily: cystatin; cystatin homology F;28-139/Domain: cystatin homology CYS>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R;Cornwall, G.A.; Orgebin-Crist, M.C.; Hann, S.R. Mol. Endocrinol. 6, 1653-1664, 1992
A;Title: The CRES gene: a unique testis-regulated gene related A;Reference number: A45361; MUID:33078799; PMID:1280328
A;Accession: A45361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cystatin-related epididymal specific protein - mouse (fragment)
C;Species: Mus musculus (house mouse)
C;Date: 10-Jun-1993 #sequence_revision 18-Nov-1994 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
A45361
                                                                                                                                                                       A; Molecule type: protein A; Residues: 1-120 <ESN>
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Date: 10-Jun-1993 #sequence_revision 18-Nov-1994 #text_change 05-Nov-1999;
  Matches
                         Best
                                           Query Match
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19; Conserv
l Similarity
20; Conserv
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Conservative
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                  41.2%;
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; Pred. No. 3.4e-08;
14; Mismatches 11
12; Mismatches
                  Score 112; DB 2;
Pred. No. 3.1e-07;
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  14;
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                                      Length 120;
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2 QYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPET 47

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cystatin C precursor - mouse
C;Species: Mus musculus (house mouse)
C;Date: 14-Dec-1990 #sequence_revision 14-Dec-1990 #text_change 16-Jul-1999
C;Accession: A36163
R;Solem, M.; Rawson, C.; Lindburg, K.; Barnes, D.
Biochem. Biophys. Res. Commun. 172, 945-951, 1990
A;Title: Transforming growth factor beta regulates cystatin C in serum-free mouse, Fitle: Transforming growth factor beta regulates
A;Reference number: A36163; MUID:91054522; PMID:2241983
A;Accession: A36163
A;Accession: A36163
A;Status: preliminary
A;Molecule type: mRMA
A;Residues: 1-140 <SOL>
A;Cross-references: EMBL:M59470; NID:g192911; PIDN:AAA63298.1; PID:g192912
C;Superfamily: cystatin homology
F;29-140/Domain: cystatin homology <CYS>
F;93-103,117-137/Disulfide bonds: #status predicted
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(;Species: Rattus norvegicus (Norway rat)
C;Date: 01-Dec.1993 #sequence_revision 03-Aug-1995 #text_change 16-Jul-1999
C;Accession: S07085, S01337; S21109
R;Cole, T.; Dickson, P.W.; Esnard, F.; Averill, S.; Risbridger, G.P.; Gauthier,
Eur. J. Biochem. 186, 35-42, 1989
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A; Residues: 8, 'XX', 11-20 <ES2>
C; Superfamily: cystatin; cystatin homology
C; Keywords: cystatine proteinase inhibitor
F;16-127/Domain: cystatin homology <CYS>
F;80-90,104-124/Disulfide bonds: #status predicted
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A;Residues: 8-49 <ESN.
A;Residues: A; Esnard, F; Guillou, F.; Gauthier, F.
R;Esnard, A; Esnard, F; Guillou, F.; Gauthier, F.
FEBS Lett. 300, 131-135, 1992
A;Title: Production of the cysteine proteinase inhibitor cystatin C by A;Reference number: S21109; MUID:92225121; PMID:1563513
A;Accession: S21109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEBS Lett. 236, 475-478, 1988
A;Title: Two rat homologues of human cystatin C.
A;Reference number: S01337; MUID:88313020; PMID:3044831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Cross-references: EMBL:X16957; NID:g56041; PIDN:CAA34831.1; PID:g736290 R;Esnard, A.; Esnard, F.; Faucher, D.; Gauthier, F. FEBS Lett. 236, 475-478, 1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Title: The cDNA structure and expression analysis of the genes for the cysteine proteine proteins; S07085; MUID:90092122; PMID:2689174
A;Accession: S07085
A;Status: preliminary
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A; Residues: 1-127 <CO
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Pred. No. 4e-06;
L1; Mismatches
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Pred. No. 3.3e-07
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A;Title: The unber: S01462
A;Reference number: S01462
A;Contents: annotation; disulfide bonds
A;Auerswald, E.A.; Naegler, D.K.; Schul:

B;Auerswald, E.A.; Naegler, 1994

B;Auerswald, E.A.; Naegler, 1994

B;Auerswald, E.A.; Naegler, 1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                            A,Molecule type: protein
A,Residues: 24-139 cSCH>
R;Turk, V.; Brzin, J.; Longer, M.; Ritonja, A.; Eropkin, M.; Borchart, U.; Machleidt, W.
Hoppe-Seyler's Z. Physiol. Chem. 364, 1487-1496, 1983
A;Title: Protein inhibitors of cysteine proteinases. III. Amino-acid sequence of cystatin
A;Reference number: S01461; MUID:84110059; PMID:6662498
A;Accession: S01461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Molecule type: mRNA
A;Residues: 1-139 <COL>
A;Residues: 1-139 <COL>
A;Cross-references: GB;J05077; NID:g211714; PIDN:AAA48744.1; PID:g211715
R;Schwabe, C.; Anastasi, A.; Crow, H.; McDonald, J.K.; Barrett, A.J.
Biochem. J. 217, 813-817, 1984
A;Title: Cystatin. Amino acid sequence and possible secondary structure.
A;Reference number: A01274; MUID:84178305; PMID:6712597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C;Species: Gallus gallus (chicken)
C;Date: 03-Aug-1984 #sequence revision 12-Apr-1996 #text change 29-Oct-1999
C;Accession: A34456; A01274; S01461; S48159; S04008; JN0789
R;Colella, R.; Sakaguchi, Y.; Nagase, H.; Bird, J.W.C.
J. Biol. Chem. 264, 17164-17169, 1989
A;Title: Chicken egg white cystatin. Molecular cloning, nucleotide sequence, A;Reference number: A34456; MUID:90008873; PMID:2793849
A;Accession: A34456
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A; Residues: 1-112 <HIR>
C; Superfamily: cystatin; cystatin homology
C; Keywords: colostrum; cysteine proteinase inhibitor
F; 2-112/Domain: cystatin homology <CYS>
                                                                                                                                                                                                                                                                          A;Molecule type: protein
A;Residues: 24-139 <TUR>
R;Rhastasi, A.; Brown, M.A.; Kembhavi, A.A.; Nicklin, M.J.H.; Sayers, C.A.; Sunter, D.C.,
Biochem. J. 211, 129-138, 1983
A;Title: Cystatin, a protein inhibitor of cysteine proteinases. Improved purification fro
A;Reference number: A37514; MUID:83256421; PMID:6499085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEBS Lett. 186, 41-45, 1985
A;Title: Complete amino acid sequence of bovine colostrum low-M-r cysteine proteinase
A;Reference number: A01271; MUID:85231205; PMID:3891407
A;Accession: A01271
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R;Hirado, M.; Tsunasawa,
                                                                                                                                                    R;Grubb, A.; Lofberg, H.; Barrett, A.J.
FEBS Lett. 170, 370-374, 1984
A;Title: The disulphide bridges of human cystatin C (gamma-trace) and chicken cystatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cystatin precursor - chicken
                                                                                                                                                                                                                                         A; Contents: annotation; characterization of protein
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inhibitory activity,
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Pred. No. 4.2e-06;
2; Mismatches 15
                                                              Schulze,
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folding and
                                                           A.J.; Engh,
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   conformational
                                                              R.A.; Genenger,
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      analysis
                                                              G.; Machleidt, W.
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A;Cross-references: EMBL:X05607; NID:g30371; PIDN:CAA29096.1; PID:g755738
R;Levy, E.; Lopez-Otin, C.; Ghiso, J.; Geltner, D.; Frangione, B.
J. Exp. Med. 169, 1771-1778, 1989
A;Title: Stroke in Icelandic patients with hereditary amyloid angiopathy is related to A;Reference number: JL0095; MUID:89235594; PMID:2541223
A;Accession: JL0095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NiAlternate names: gamma-CSF; gamma-trace; neuroendocrine basic polypeptide; post-gamma (;Species: Homo sapiens (man)
C;Species: Homo sapiens (man)
C;Jate: 06-Uul-1982 #sequence revision 31-Mar-1991 #text change 08-Dec-2000
C;Accession: S10216; S00004; JU095; A33400; S02751; A01270; A25434; S12288; A32732; A60
R;Abrahamson, M.; Olafsson, I.; Palsdottir, A.; Ulvsbaeck, M.; Lundwall, A.; Jensson, O.
Blochem. J. 268, 287-294, 1990
A;Title: Structure and expression of the human cystatin C gene.
A;Reference number: S10216; MUID:90303202; PMID:2383674
A;Accession: S10216
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C;Superfamily: cystatin; cystatin homology
C;Keywords: cysteine proteinase inhibitor; egg white; phosphoprotein
E;1-23/Domain: signal sequence #status predicted <SIG>
F;24-139/Product: cystatin, long form #status experimental <CYLF>
F;30-139/Domain: cystatin homology <CYS>
F;32-139/Product: cystatin, short form #status experimental <CYSF>
E;32-139/Product: cystatin, short form #status experimental <CYSF>
E;76-80/Region: inhibitory #status predicted
E;94-104,118-138/Disulfide bonds: #status experimental
F;103/Binding site: phosphate (Ser) (covalent) (partial) #status experimental
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A; Residues: 1-139 < CO2>
A; Cross-references: GB: M95725
A; Cross-references: GB: M95725
A; Note: authors failed to translate the codon for residue 115-Tyr
C; Comment: This protein binds tightly to and inhibits a variety of cysteine proteinases
C; Genetics:
                                                                                                                                                                                                                                                            A;Title: Molecular cloning and sequence analysis of cDNA coding A;Reference number: S00004; MUID:87219149; PMID:3495457 A;Accession: S00004
                                                                                                                                                                                                                                                                                                                                                                A;Cross-references: EMBL:X52255; NID:g30257; PIDN:CAA36497.1; R;Abrahamson, M.; Grubb, A.; Olafsson, I.; Lundwall, A. FEBS Lett. 216, 229-233, 1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: .DNA
A; Residues: 1-146 <AB1>
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A; Residues: 24-139 <AUE>
R; Labber, B.; Krieglerein, K.; Henschen,
FEBS Lett. 248, 162-168, 1989
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                                                                                                                                                                                                  A; Molecule type: mRNA
A; Residues: 1-146 < AB2>
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Matches 19
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A;Molecule type: protein
A;Rotecule type: protein
A;Rote: this protein, purified from cerebrospinal fluid of patients with the autosomal
A;Note: this protein, purified from cerebrospinal fluid of patients with the autosomal
e defective gene is not present in CSF but is found instead in amyloid deposits
R;Popovic, T.; Brzin, J.; Ritonja, A.; Turk, V
Biol. Chem. Hoppe-Seyler 371, 575-580, 1990
A;Title: Different forms of human cystatin C.
A;Reference number: $10607; MUID:91025625; PMID:2222856
A;Accession: $10607
                                                                                                 A;Experimental source: urine, kidney disease A;Note: truncated forms with amino ends at positions R;Grubb, A.; Lofberg, H.; Barrett, A.J. FEBS Lett. 170, 370-374, 1984
A;Title: The disulphide bridges of human cystatin C (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Molecule type: protein
A;Residues: 27-76 <BRZ>
R;Olafsson, I.; Gudmundsson, G.; Abrahamson, M.; Jensson, O.; Grubb, A.
Scand, J. Clin. Lab. Invest. 50, 85-93, 1990
A;Title: The amino terminal portion of cerebrospinal fluid cystatin C in
A;Reference number: A60552; MUID:90193615; PMID:2315647
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A;Cross-references: GB:X61681; NID:g30367; PIDN:CAA43856.2; PID:g4490944
A;Note: the cystatin C gene isolated from the brain of an Icelandic patient
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Biochem. Biophys. Res. Commun. 118, 103-109, 1984
A;Title: Human cystatin, a new protein inhibitor of cysteine proteinases.
A;Reference number: A32732; MUID:84128015; PMID:6365094
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A;Molecule type: protein
A;Residues: 37-93,'Q',95-146 <GHI>A;Residues: 37-93,'Q',95-146 <GHI>A;Residues: 37-93,'Q',95-146 <GHI
A;Residues: 37-93,'Q',95-146 <GHI
R;Turk, V.; Brzin, J.; Longer, M.; Ritonja, A.; Eropkin, M.; Borchart, U.; Machleidt, Roppe-Seyler's Z. Physiol. Chem. 364, 1487-1496, 1983
A;Title: Protein inhibitors of cysteine proteinases. III. Amino-acid sequence of cyste A;Reference number: S01461; MUID:84110059; PMID:6662498
A;Accession: S12288
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A;Title: Isolation of a sequence encoding human cystatin C.
A;Reference number: S02751; MUID:89076507; PMID:3264504
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A;Title: The human cystatin C gene (CST3) is a member of the cystatin gene family which A;Reference number: A33400; MUID:89350949; PMID:2764935
A;Reference number: S01462
A;Contents: annotation; disulfide bonds
R;Berti, P.J.; Storer, A.C.
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A;Residues: 27-131,'S',133-146 <GRU>
A;Residues: 27-131,'S',133-146 <GRU>
R;Ghiso, J.; Jensson, O.; Frangione, B.
Proc. Natl. Acad. Sci. U.S.A. 83, 2974-2978, 1986
A;Title: Amyloid fibrils in hereditary cerebral hemorrhage with amyloidosis of Iceland
A;Reference number: A25434; MUID:86206076; PMID:3517880
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A;Residues: 82-119 <GH2>
A;Residues: 82-119 <GH2>
A;Cross-references: EMBL:M27769
A;Note: the authors translated the codon ACC for residue
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Biol. Chem. Hoppe-Seyler 369, 205-208, 1988
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Proc. Natl. Acad. Sci. U.S.A. 79, 3024-3027, 1982
A;Title: Human gamma-trace, a basic microprotein: amino
A;Reference number: A01270; MUID:82222268; PMID:6283552
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A;Residues: 27-5:
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A;Residues: 27-73 <TUR>
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A; Residues: 1-24, 'T', 26-146 <SAI>
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A;Molecule type: DNA
A;Residues: 1-141 < SAI>
A;Cross-references: GB:M19673; GB:M19170; NID:g186403; PIDN:AAA36116.1; PID:g386826
A;Cross-references: GB:M19673; GB:M19170; NID:g186403; PIDN:AAA36116.1; PID:g386826
A;Cross-references: GB:M19673; GB:M19170; NID:g186403; PIDN:AAA36116.1; PID:g386826
A;Cross-references: GB:M19673; GB:M1970; RSID: RSID: Cross-references: GB:M1970; RSID: RSID: Cross-references: GB:M1970; RSID: R
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A;Status: preliminary
A;Molecule type: protein
A;Residues: 27-49;106-146 <BER>
C;Comment: This protein is found
f patients with certain autoimmun
C;Comment: This protein is an inh
C;Comment: A mutant cystatin C, w
C;Genetics:
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A;Gene: GDB:CST3
A;Cross-references: GDB:119817; OMIM:105150
A;Map position: 20p11.2-20p11.2
A;Introns: 81/3; 119/3
C;Superfamily: cystatin; cystatin homology
C;Superfamily: cystatin; cystatin homology
C;Keywords: amyloid; cysteine proteinase inhibitor; extracellular protein; hydroxyprolin
F;1-26/Domain: signal sequence #status predicted <SIG>
F;27-146/Product: cystatin C #status experimental <MAT>
F;55-146/Domain: cystatin homology <CYS>
F;81-85/Region: inhibitory #status predicted
F;29/Modified site: hydroxyproline (Pro) (partial) #status experimental
F;99-109,123-143/Disulfide bonds: #status experimental
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A;Accession: B29632
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A;Title: Local pH-dependent conformational changes leading to proteolytic susceptibility
A;Reference number: S55305; MUID:94379969; PMID:8092991
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Comment: This protein is an inhibitor of cysteine proteinases and comment: A mutant cystatin C, with 94-Gln, is deposited in heredit
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12;
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ed., pp.497-505, Walter de Gruyt
inhibitors in human saliva.
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R;Saitoh, E.; Kim, H.S.; Smithies, O.; Maeda, N. Gene 61, 329-338, 1987
A;Title: Human cysteine-proteinase inhibitors: nucleotide sequence analysis A;Reference number: A91589; MUID:88185836; PMID:3446578
A;Accession: A29632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C;9pecies: Homo sapiens (man)
C;Date: 28-May-1986 #sequence_revision 08-Feb-1996 #text_C;Date: 28-May-1986 #sequence_C;Accession: A28110; S02499; A39632; A01273; S19279
R;Al-Hashimi, I.; Dickinson, D.P.; Levine, M.J.
J. Biol. Chem. 263, 9381-9387, 1988
A;Title: Purification, molecular cloning, and sequencing A;Title: Purification, molecular cloning, and sequencing A;Reference number: A28110; MUID:88243825; PMID:2837486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cystatin SN precursor [validated] N;Alternate names: cystatin SA-I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R;Ritonja, A.; Evans, H.J.; Machleidt, W.; Barrett, A.J. Biochem. J. 246, 799-802, 1987
A;Title: Amino acid sequence of a cystatin from venom of A;Reference number: A28793; MUID:88076861; PMID:3500714
A;Accession: A28793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cystatin -
C;Species:
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Best Local Similarity
"~+~hes 15; Conserv:
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A;Map position: 20p11.2-20p11.2
C;Superfamily: cystatin; cystatin homology
F;30-141/Domain: cystatin homology <CYS>
R;Isemura, S.; Saitoh, E.; Sanada, K. FEBS Lett. 198, 145-149, 1986
A;Title: Characterization of a new cysteine proteinase inhibitor of human saliva, cystati A;Reference number: A01273; MUID:86164938; PMID:3514272
A;Accession: A01273
                                                                                                                                                                                                                                                                                                                                                                                       A;Cross-references: GB:J03870; NID:g337751; PIDN:AAA60299.1; PID:g337752 R;SaltOh, E.; Isemura, S.; Sanada, K.; Kim, H.S.; Smithles, O.; Maeda, N. Biol. Chem. Hoppe-Seyler 369, 191-197, 1988 A;Title: Cystatin superfamily. Evidence that family II cystatin genes are A;Reference number: S02489; MUID:89076505; PMID:3202964
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                                                                                                                                                                                                                                                                                        A; Molecule type: DNA
A; Residues: 21-141 <SA2>
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A; Residues: 1-141 < ALH >
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                                                                                                                      A;Molecule type: DNA
A;Residues: 1-86,'I',88-141 <SAI>
                                                                                                                                                                                                                                                                                                                                             A;Status: not compared with conceptual translation
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Date: 15-Dec-1988 #sequence_revision
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17; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EKYNAGSKNDYYFKERRVVEAQSQVVSGVKYYLMMELLKTTCKK
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Pred. No. 0.00
14; Mismatches
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Pred. No. 0.0002;
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N;Alternate names: cysteine proteinase inhibitor; onchocerciasis antigen
C;Species: Onchocerca volvulus
C;Date: 04-Mar-1993 #sequence revision 18-Nov-1994 #text_change 17-Mar-2000
C;Accession: A43428, B43927
R;Lustigman, S.; Brotman, B.; Huima, T.; Prince, A.M.; McKerrow, J.H.
J. Biol. Chem. 267, 17339-17346, 1992
A;Title: Molecular cloning and characterization of onchocystatin, a cysteine proteinase
A;Reference number: A43428
A;Status: preliminary
A;Anccession: A43428
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-162 < LUSA
A;Cross-references: GB:M37105; NID:g159905; PID:g159906
A;Cross-reference extracted from NCBI backbone (NCBIN:111962, NCBIP:111963)
A;Chandrashekar, R.; Masood, K.; Alvarez, R.M.; Ogunrinade, A.F.; Lujan, R.; Richards J.
J. Clin. Invest. 88, 1460-1466, 1991
A;Title: Molecular cloning and characterization of recombinant parasite antigens for imm
A;Reference number: A43927; MUID:92042729; PMID:1840605
A;Cross-references: GB:M374,
A;Cross-references: GB:M374
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A;Map position: 20p11.2-20p11.2
C;Superfamily: cystatin; cystatin homology
C;Keywords: cystetine; cystatin homology
C;Keywords: cystetine proteinase inhibitor; extracellular protein;
F;1-20/Domain: signal sequence #status predicted <SIG>
F;1-20/Domain: signal sequence #status experimental <MATI>
F;29-141/Product: cystatin SA-I #status experimental <MATZ>
F;30-141/Domain: cystatin SN #status experimental <MATZ>
F;30-141/Domain: cystatin homology <CYS>
F;76-80/Region: inhibitory #status predicted
F;94-104,118-138/Disulfide bonds: #status predicted
                                                                                                                                                                                                                                                                                                              A;Residues: 'P',37-57,'A',59-71,'R',73-83,'N',85-126,'M',128-162 <CHA>A;Cross-references: GB.M60279; NID:g159888
A;Experimental source: colone OC 93.
A;Note: sequence extracted from NCBI backbone (NCBIN:65111, NCBIP:65113) C;Superfamily: cystatin; cystatin homology C;Keywords: cysteine proteinase inhibitor
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A; Residues: 29-14
R; Ramasubbu, N.;
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Biochem. J. 280, 341-352, 1991
A;Title: Large-scale purification and characterization of the major phosphoproteins and A;Reference number: S19279; MUID:92082469; PMID:1747107
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Best Local 9
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21-55 <RAM>
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                                                                            NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EYNKATKDDYYRRPLRVLRARQQTVGGVNYFFDVEVGRTICTKSQ 98
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                                                                                                                                                                  Conservative
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                                                                                                                                                                                               29.8%; Score 81; DB 2; 34.1%; Pred. No. 0.0043;
                                                                                                                                                                  Mismatches
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A;Map position: 20p11.2-20p11.2
(;Superfamily: cystatin; cystatin homology
C;Keywords: cysteine proteinase inhibitor; phosphoprotein;
E;1-20/Domain: signal sequence #status predicted <SIG>
F;21-141/Product: cystatin S #status predicted <MAT>
F;30-141/Domain: cystatin homology <CYS-
F;30-180/Region. inhibitory #status predicted
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R;Residues: 21-55 <RAM>
R;Johnsson, M.; Richardson, C.F.; Bergey, E.J.; Levine, M.J.; Nancollas, G.H.
Arch. Oral Biol. 36, 631-636, 1991
A;Title: The effects of human salivary cystatins and statherin on hydroxyapatite
A;Reference number: A56608; MUID:92074898; PMID:1741693
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A;Title: Cystatin S: a Cysteine proteinase inhibitor of hu A;Title: Cystatin S: a Cysteine Proteinase inhibitor of hu A;Reference number: A91981, MUID:85104877; PMID:6394600
A;Contents: annotation; inhibitor specificity
A;Contents: annotation; inhibitor specificity
R;Hawke, D.H.; Yuan, P.M.; Wilson, K.J.; Hunkapiller, M.W. R;Hawke, D.H.; Yuan, P.M.; Wilson, K.J.; Hunkapiller, M.W. Biochem. Biophys. Res. Commun. 145, 1248-1253, 1987
A;Title: Identification of a long form of cystatin from hu A;Reference number: A29603; MUID:87270697; PMID:3496880
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A;Note: authors desigate form without phosphate as cystatin S and form containing one photocomment: This protein strongly inhibits papain and ficin, partially inhibits stem brome
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A;Title: Large-scale purification and characterization of the major phosphoproteins and A;Reference number: S19279; MUID:92082469; PMID:1747107
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A; Residues: 29-134, D',136-141 <ISB>
R; Isemura, S; Saitoh, E; Ito, S:; Isemura,
J. Biochem. 96, 1311-1314, 1984
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A;Molecule type: protein
A;Molecule type: protein
A;Residues: 21-134, D', 136-141 <IHU>
A;Residues: 21-134, D', 136-141 <IHU
A;Residues: 21-134, D
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N;Alternate names: cystatin SA-III; salivary acidic protein-l
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A;Molecule type: protein
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A; Residues: 21-51 < HAW>
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A;Tille: Salivary cystatin SA-III, a potential precursor of the acquired enamel pellicle A;Reference number: S16500; MUID:91378515; PMID:1898055
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Biochem. J. 278, 627-635, 1991
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R;Lamkin, M.S.; Jensen, J.L.; Setayesh, M.R.; Troxler, R.F.; Oppenheim,
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F;94-104,118-138/Disulfide bonds:

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RESULT 15
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N;Alternate names: cysteine proteinase inhibitor
C;Species: Oncorhynchus keta (chum salmon)
C;Date: 14-Jul-1994 #sequence_revision 14-Jul-1994 #text_change 16-Jul-1999
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submitted to the EMBL Data Library, July 1997
submitted to the EMBL Data Library, July 1997
A;Description: The sequence of C. elegans cosmid F41E6.
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A; Residues: 1-111 < KOI'>
C; Comment: The intracellular role of this protein is the inhibition of intralysosomal pr
C; Superfamily: cystatin; cystatin homology
C; Keywords: cystetne proteinase inhibitor
F; 2-111/Domain: cystatin homology < CYS>
F; 48-52/Region: inhibitory
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Biochem. 58, 164-169, 1994
Biosci. Biotechnol. Biochem. 58, 164-169, 1994
A;Title: The complete amino acid sequence of pituitary cystatin from chum salmon
A;Reference number: JC2040; MUID:94162738; PMID:7764512
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A; Accession: T31871
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cystatin precursor - chum salmon C; Species: Oncorhynchus keta (chum
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Map position: 5
A;Introns: 34/3; 102/3; 140/2; 180/2; 336/2; 357/2; 417/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Residues:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C;Accession: T31871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ;Residues: 1-498 <SAM>
;Cross-references: EMBL:AF016448; PIDN:AAB65956.1; GSPDB:GN00023; CESP:F41E6.6
;Experimental source: strain Bristol N2; clone F41E6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Species: Caenorhabditis elegans
Date: 29-Oct-1999 #sequence_revision 29-Oct-1999 #text_change 29-Oct-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
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Best Local (
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genetics:
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nes 15; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Match 28.3%; Score 77; DB 2; Length 498; Local Similarity 27.7%; Pred. No. 0.05;
                                                                                                                                                          26
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                                                                                                                                                                                                                                                         Similarity
13; Conserva
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                                                                                                                                                        EHNKKTNDMFVRQVAKVVNAQKQVVSGMKYIFTVQMGRTPCRK 68
                                                                                                                                                                                                       QYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK 44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EKFNQQSNDAYKWELDRTWEVERKLSGGIHYSIFVTLVKTDCKKGQT 88
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                   27.6%; Score 75; DB 1; Length 111; 30.2%; Pred. No. 0.017; ative 15; Mismatches 15; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29.4%; Score 80; DB 1; Length 141; 33.3%; Pred. No. 0.005; tive 12; Mismatches 18; Indels
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  salmon)
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C;Date: 26-Sep-1996 #sequence_revision 01-Nov-1996 #text_change 21-Jan-2000 C;Accession: JC4918 R;Yamashita, M.; Konagaya, S. R;Yamashita, M.; Konagaya, S. J. Biochem. 120, 483-487, 1996 A;Title: Molecular cloning and gene expression of chum salmon cystatin. A;Reference number: JC4918; MUID:97058289; PMID:8902609
  맑
                                                                                                                                                                                                                                           A;Cross-references: DDBJ:D86628
A;Experimental source: liver
C;Comment: This protein is a homolog of mammalian cystatin C,
C;Superfamily: cystatin; cystatin homology
C;Keywords: liver
                                         Ş
                                                                                                                                                                                             F;1-21/Domain: signal sequence #status predicted <SIG>F;23-132/Domain: cystatin homology <CYS>
                                                                                                                                                                                                                                                                                                                                                                        A;Accession: JC4918
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-132 <YAM>
                                                                                          Query Match 27.6%;
Best Local Similarity 30.2%;
Matches 13; Conservative 1
  47
                                              2 QYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK 44
EHNKKTNDMFVRQVAKVVNAQKQVVSGMKYIFTVQMGRTPCRK 89
                                                                                               15;
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Pred. No. 0.02;
L5; Mismatches
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Search completed: March 18, 2004, 14:23:17 Job time : 9.43056 secs

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Maximum Match 100%
Listing first 45 summaries
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Maximum DB seq length: 2000000000
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Perfect score:
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        Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
       Query
Match
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Gapop 10.0 , Gapext 0.5
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272
1 DQYNKESDDKYHFR
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       SwissProt_42:*
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       137
139
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CS11 HUMAN
CS18 HUMAN
CS18 HUMAN
CS18 MOUSE
CS18 RAT
CYTC RAIT
CYTC RABIT
CYTC RABIT
CYTC BAIK
CYTC HUMAN
CYT CHUMAN
CYT CYTC BOVIN
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CYT MOUCM
CYT
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                 O9h112 homo sapien
O9d26 mus musculu
O60676 homo sapien
P32766 mus musculu
O88969 rattus norv
P14841 rattus norv
O97862 oryctolagus
P21460 mus musculu
O19093 saimiri sci
P01034 homo sapien
O19092 macaca mula
P01035 bos taurus
P81061 coturnix co
O9h114 homo sapien
P09228 homo sapien
P09228 homo sapien
P09238 homo sapien
P0935 bitis ariet
P35481 cyprinus
Q15828 homo sapien
P01037 homo sapien
P01036 homo sapien
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P01036 homo sapien
P01037 homo sapien
P01036 homo sapien
P01037 norchyrchu
O99195 mus musculu
P01046 bos taurus
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RESULT 1 CS11 HUM ID CS11 HUM DT 28-1 DT 28-1 DT 28-1 DT CY81 GN CST. OS Hum OC Buk Mam OC Mam OC Mam RA Beal RA C198 RA C198 RA C198 RA C198 RA Grain RA Hud RA C198 RA R	60000000000000000000000000000000000000
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Created) Last sequence update) Last sequence update) Last annotation update) L	KNH2 BOVIN CST9 MOUSE CYT NAJAT CGIC ORYSA KNG MOUSE KNG HUWAN LAR CAEEL GSHR YEAST SP24 BOVIN NIA1 MALZE YBIP ECOLI HRG HUWAN ALIGNMENTS
ebrata; Buteleostomi; minidae; Homo. on J., Gilbert J.G.R., e A.K., Bagguley C.L., e A.K., Bagguley C.L., man A.M., Brown A.J., Claer C.M., Clarter N.P., culark S.Y., Clee C.M., Carter N.P., Gwilliam R., Hall R.E., Gwilliam R., Hall R.E., Johnson C.M., Johnson D., Johnson C.M., Johnson D., Laird G.K., Lawlor S., Llayd D.M., Lovell J.D., Clay K., McMuray A.A., n.J.C., Nickerson T., peck A.I., b R.W., Ramsay H., Shownkeen R., Sims S., Shownkeen R., Sims S., Shownkeen R., Sims S., Showns D.M., Thorpe A., Wallis J.M., Thorpe A., Walliams L., Williams S.A., M., Bentley D.R., Beck S., f human chromosome 20."; 1)). ms=2; ms=2;	P01045 bos taurus Q920h6 mus musculu P81714 naja atra (P93411 oryza sativ O08677 mus musculu P01042 homo sapien Q9bmn8 caenorhabdi P41921 saccharomyc Q27967 bos taurus P17571 zea mays (m P75785 escherichia P04196 homo sapien

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RA Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
RA Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
RA Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
RA Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
RA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
RA Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,
RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
RA Gustincih S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
RA Gustincih S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
RA Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,
RA Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
RA Suzuki H., Toyo-oka K., Wang K.H., Wettz C., Whittaker C., Wilming L.,
Wundhay-Rovie A Vendida K. Haserawa Y Kawaii H. Koheniki S.
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CS11 MOUSE
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                                                                         "Functional annotation of a full-length mouse cDNA Nature 409:685-690\,(2001).
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entitles requires a license agreement (
or send an email to license@isb-sib.ch)
                                                                                                                                              Wynshaw-Boris A., Yoshida
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=21085660; PubMed=11217851;
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Genew; HGNC:15959; CST11
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SMART; SM00043; CY; 1.
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(Rel. 41,
(Rel. 42,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           precursor.
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Signal; Alternative splicing.
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Missing (in isoform:
/FTIG-VSP_001260.
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Pred. No. 6.3e-28;
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                                                                                                                                              Hasegawa Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus.
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                           family
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                                                                                                                                              Kawaji H.,
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                                                                                                                                              Kohtsuki S.,
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            Deloukas P., Matthews L.H., Ashurst J., Burton J., Gilbert J.G.R., Almosta J.P., Babbage A.K., Bagguley C.L., Almosta J.P., Babbage A.K., Bagguley C.L., Almalda J.P., Bard C.P., Blakey S.E., Bridgeman A.M., Brown A.J., Beaseley O.P., Bird C.P., Blakey S.E., Bridgeman A.M., Brown A.J., Burkl D., Burtill W.D., Butler A.P., Carder C., Carter N.P., Buck D., Burkl W., Clark S.Y., Clee C.M., Chapman J.C., Clamp M., Clark G., Clark L.N., Clark S.Y., Clee C.M., Almalda J.C., Connor R.E., Corby N.R., Clee C.M., Clegg S., Cobley V.E., Collier R.E., Connor R.E., Corby N.R., Cloulson A., Coville G.J., Deadman R., Dhami P.D., Dunn M., Cluston A.G., Frankland J.A., Fraser A., French L., Garner P., Almalda J.A., Fraser A., French L., Garner P., Almalda J.A., Fraser A., French L., Garner P., Almalda J.A., Holden J.L., Howden P.J., Almalmond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J., Almalmond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J., Almalmond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J., Almalmond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J., Almalmond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Lawlor S., Huckle E., Hunt A.R., King A., Knights A., Laird G.K., Lawlor S., Lehvaeslaiho M.H., Leversha M.A., Lloyd C., Lloyd D.M., Lovell J.D., Marsh V. Mar
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Best Local
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30-MAY-2000
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DISULFID
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A. MEDLINE=21638749; PubMed=11780052;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Transient appearance of caput epididymal sperm ma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens (Human
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Cystatin-related epididymal spermatogenic protein precursor (Cystatin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HUMAN
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HSSP; P01034; 1G9;
MGD; MGI:1925490;
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SMART; SM00043; CY; 1.
PROSITE; PS00287; CYSTAT
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9; Mismatches
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Pred. No. 9.
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RESULT CST8 MODI ID CST8 AC P3:30 DT 30 DT 28 B DE CY DB re GN CS CS CS MAC OX NC
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Best Local S
Matches 24
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P32766; O89102;
01-OCT-1993 (Re)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    elongating spermatids, whereas within the epididymis it is exclusively synthesized by the proximal caput epithelium.

-!- SIMILARITY: Belongs to the cystatin family.

This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                          232766; OBYLUL, (101-0007) (Rel. 27, Created) (101-0007-1993 (Rel. 39, Last sequence update) 30-MAY-2000 (Rel. 39, Last annotation update) 28-FEB-2003 (Rel. 41, Last annotation update) Cystatin-related epididymal spermatogenic pro
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DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Milne S.A., Mistry D., Moore M.J.F., Mullikin J.C., Nickerson T., Oliver K., Parker A., Patel R., Pearce T.A.V., Peck A.I., Phillimore B.J.C.T., Prathalingam S.R., Plumb R.W., Ramsay H., Rice C.M., Ross M.T., Scott C.B., Sehra H.K., Shownkeen R., Sims S., Skuce C.D., Smith M.L., Soderlund C., Steward C.A., Sulston J.E., Swann R.M., Sycamore N., Taylor R., Tee L., Thomas D.W., Thorpe A., Tracey A., Tromans A.C., Vaudin M., Wallis J.M., Whitehead S.L., Whittaker P., Willey D.L., Williams L., Williams S.J. Wilming L., Wray P.W., Hubbard T., Durbin R.M., Bentley D.R., Beck & Milming L., Wray P.W., Hubbard T., Durbin R.M., Bentley D.R., Beck & Milming L., Wary P.W., Hubbard T., Durbin R.M., Bentley D.R., Beck & Milming L., Wary P.W., Hubbard T., Durbin R.M., Bentley D.R., Beck & Milming L., Wary P.W., Hubbard T., Durbin R.M., Bentley D.R., Beck & Milming L., Wary P.W., Hubbard T., Durbin R.M., Bentley D.R., Beck & Milming L., Wary P.W., Hubbard T., Durbin R.M., Bentley D.R., Beck & Milming L., Wary P.W., Hubbard T., Durbin R.M., Bentley D.R., Beck & Milming L., Walliams S.J.
                                               related epididymal sp
CST8 OR CRES.
Mus musculus (Mouse).
                                                                                                                                                                                                                                                                                                                                                                                                                                                             CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SITE
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SMART; SM00043; CY; 1.
Thiol protease inhibitor; S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; AF059244; AAC14707.1; -. EMBL; AL109954; CAB64234.1; -.
                 Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                        MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GO; GO:0004869; F:cysteine pro
InterPro; IPR000010; Cystatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nature 414:865-871(2001)
                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Genew;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HSSP; P01034; 1G96
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rogers
                                                                                                                                                                                                                                                                                                                                                                                                                                               VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TISSUE SPECIFICITY: Proximal caput region of the epididymis. Le expression in the testis. Within the testis it is localized to elongating spermatids, whereas within the epididymis it is
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                                                                                                                                                                                                                                                                                                        QYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPETTN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sequence and comparative analysis of human chromosome
                                                                                                                                                                                                                                                                          EYNKESEDKYVFLVVKTLQAQLQVTNLLEYLIDVEIARSDCRKPLSTN 102
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22
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                 Chordata;
Rodentia;
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                                                                                                                                                                                                                                                                                                                                            12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protease inhibitor activity; TAS
                                                                                                                                                                                                                                                                                                                                          Score 127; DB 1;
Pred. No. 2.5e-09;
2; Mismatches 12
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BY SIMILARITY.
BY SIMILARITY.
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N-LINKED (GLCNAC. . .)
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                                                                                                                                                                                                                                                                                                                                                                                                            A -> P (in dbSNP:1054633).
/FTId=VAR_014527.
9A3512757E0F4ECD CRC64;
               Craniata; Vertebrata; I
Sciurognathi; Muridae;
                                                                                                                                                                                      PRT;
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(Cystatin 8)
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                                                                                                 precursor
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                                   Euteleostomi;
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                 Murinae;
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D.R., Beck S.,
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                                                                                                   (Cystatin-
                 Mus.
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RESULT 5
CST8_RAT
ID CST8
AC O889
DT 30-M
DT 30-M
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Best Local S
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088969;
30-MAY-2000
30-MAY-2000
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                                                                                                                                                                                                                                                                                                                                                                                                                                 DISULFID
DISULFID
CARBOHYD
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CONFLICT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through a collab between the Swiss Institute of Bioinformatics and the EMBL outst the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for commodified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "The CRES gene: a unique testis regulated gene family is highly restricted in its expression of the mouse epididymis.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Cornwall G.A., Hsia N., Sutton H.G.; "Structure, alternative splicing and chromosomal localization of the cystatin-related epididymal spermatogenic gene.";
                                                                    CST8_RAT
                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CHAIN
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HSSP; P01034; 1G96.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; AF091503; AAC61754.1
EMBL; AF090691; AAC36316.1
EMBL; S49926; AAC35390.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mol. Endocrinol. 6:اماه المارة على المارة ا
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TISSUE=Epididymis;
MEDLINE=93078799; PubMed=1280328;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE OF 4-142 FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=99247899; PubMed=10229662; Cornwall G.A., Hsia N., Sutton H.G.
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SEQUENCE FROM N.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE SPECIFICITY: Proximal caput region of the epididym expression in the testis. Within the testis it is localized elongating spermatide, whereas within the epididymis it in exclusively synthesized by the proximal caput epithelium. INDUCTION: Testicular factors or hormones other than andropresent in the testicular fluid may be involved in the region of CRES gene expression.

SIMILARITY: Belongs to the cystatin family.
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                                                                                                                                                                                                                                                                          19;
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                                                                                                                                                                                                                                                                                                                                                                   142 AA;
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                                                                    STANDARD;
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AAC36316.1; -.
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1; Mismatches
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N-LINKED (GLCNAC. . .) (POTENTIA)
PLWLSLILFIIP -> GTRDEQVGESQK (IN
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BY SIMILARITY.
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                                                                      PRT;
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No. 1
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                                                                                                                                                                                                                                                                                                                       DB 1;
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                                                                                                                                                                                                                                                                                                                  Length 142
                                                                                                                                                                                                                                                                                                                                                                   CRC64;
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region
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to the
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(Rel. 39, Created) (Rel. 39, Last seq

sequence

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CYTC RATC
ID CYTC
AC P148
AC P148
DT 01-A
DT 01-A
DT 28-F
DT CYBt
GN CST33
OS Ratt
GN CST32
RN CB1
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                                                                                                                                                                                                                                                                                                                                                                                                                                          CYTC_RAT
P14841;
01-APR-1990
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DISULFID
DISULFID
CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                              01-APR-1990 (Rel. 14,
01-APR-1990 (Rel. 14,
28-FEB-2003 (Rel. 41,
   MEDLINE=90092122; PubMed=26891
Cole T. Dickson P.W., Esnard
Gauthier F., Schreiber G.;
"The cDNA structure and expres
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Rodentia;
                                                                                                                  STRAIN-Buffalo;
                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                        Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                   CST3
                                                                                                                                                                                                                                                                                                                                                           Cystatin C precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               entities requires a license agreement (S or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cystatin-related epididymal spermatogenic Biochem. J. 340:85-93(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cornwall G.A., Hsia N., Sutton H.G. "Structure, alternative splicing an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN=Sprague-Dawley; TISSUE=Epididymis; MEDLINE=99247899; PubMed=10229662;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rattus norvegicus (Rat).
                                                                                                                                                                                                          NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                               Rattus norvegicus (Rat)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SIMILARITY: Belongs to the cystatin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUBCELLULAR LOCATION: Secreted
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pro; IPR000010; Cystatin.
PF00031; cystatin; 1.
; SM00043; CY; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKP 45
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Swiss Institute of Bioinformatics and the EMBL outstation Bioinformatics Institute. There are no restrictions on if profit institutions as long as its content is in no w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A
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                                                                                    PubMed=2689174;
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43.2%;
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CYSTATIN-RELATED EPIDIDYMAL SI
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N-LINKED (GLCNAC. . . . )
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Pred. No. 8.5e
L2; Mismatches
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                                                            Averill F.,
      analysis
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              There are no rest
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MBL outstation -
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RESULT 7

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MEDLINE=88313020;
Esnard A., Esnard
                                                                                                                                                                                                                                                                                       entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                            the European Bioinformatics Institute. There are no resuse by non-profit institutions as long as its content modified and this statement is not removed. Usage by an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Two
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE OF 8-127.
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                                                                                                                                                                                Thiol
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PIR; S10587; S10587.
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                                                                                                                                                                                                                                                                                                                                            between
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                                                                                                                                                                                                                                                                                                                                                                                                                                 FEBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=92225121; PubMed=1563513; Esnard A., Esnard F., Guillou F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE=Sertol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEBS
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                                                                                                                                                            SIGNAL
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                                                                                                                                                                                                                         InterPro; IPR000010;
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SIMILARITY: Belongs to
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INE=88313020; PubMed=3044831; rd A., Benard F., Faucher D., Gaut rat homologues of human cystatin Lett. 236:475-478(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                 Lett.
                                                                                                                                                                                                     PF00031; cystatin; 
; SM00043; CY; 1.
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                                          Conservative
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A., Faucher D.,
lier F.;
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inhibitor cystatin C
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Best Local S
Matches 19
  mouse embryo
Biochem. Biop
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P21460;
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DISULFID
SEQUENCE
                                      SEQUENCE FROM N.A.
STRAIN-BALB/C; TISSUE=Brain;
MEDLINE=91054522; PubMed=2241983;
Solem M., Rawson C., Lindburg K., Barnes D.
"Transforming growth factor beta regulates mouse embryo (SFME) cells.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACT SITE
                                                                                                                                                                                                                                                                                                                                           01-MAY-1991 (Rel. 18, Created)
01-FEB-1996 (Rel. 33, Last seg
10-OCT-2003 (Rel. 42, Last ann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOUSE
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                                                                                                                                                                                                                                 Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                       Cystatin C
CST3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; AB009342; BAA75921.1; -. HSSP; P01034; 1G96.
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
                                                                                                                                                                                                                                                                               Mus musculus
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Large scale isolation of osteoclast-specific genes by an improved method involving the preparation of a subtracted cDNA library.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kobori M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN=Japanese white; MEDLINE=98424349; PubMe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A
                                                                                                                                                                                                         NCBI_TaxID=10090
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Cystatin C precursor.
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SM00043; CY; 1.
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19; Conserv
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                          Biophys.
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PubMed=9753427;
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Rodentia;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14;
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REACTIVE SITE.
SECONDARY AREA OF CONTACT.
BY SIMILARITY.
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BY SIMILARITY.
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Pred. No. 3.9e-07
4; Mismatches 1
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Sciurognathi; Muridae;
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                                                                     cystatin
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RX MEDLINE=2238257; PubMed=12477932;
RX MEDLINE=2238257; PubMed=12477932;
RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA Klausner R.D., Collins F.S., Wagner L., Schaefer C.F., Bhat N.K.,
RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA Altschul S.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA Diacchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA Diacchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA Diacchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
RA Brownstein M.J., WcEwan R.J., Malek J.A., Gunaratne P.H.,
RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA Richards S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA Richards S.A., WcEwan J.J., Kodergren E.J., Lu X., Gibbs R.A.,
Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
RA Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
RA Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.,
"Generation and initial analysis of more than 15,000 full-length
RT human and mouse cDNA sequences.",
Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).

C. ---VIUCTION. As an inhibitor of cysteine proteinases, this protein is
C. cremitable and protein in family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; M59470; AAA63298.1; --
EMBL; U10098; AAB41056.1; --
EMBL; AF483486; AAL90760.1; --
EMBL; AF483487; AAL90761.1; --
EMBL; BC002072; AAH02072.1; --
PIR; A36163; A36163.
HSSP; P01034; 1G96.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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Mamm. Genome 12:657-663(2001).
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MEDLINE=21363810; PubMed=11471062;
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Huh C., Nagle J.W., Kozak C.A., Abrahamson M., Karlss "Structural organization, expression and chromosomal mouse cystatin-C-encoding gene (Cst3).";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
STRAIN=129/Sv; TISSUE=Liver;
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T.E., Sikela J.M.;
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15-JUL-1998
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Wei L.H., Walker L.C., Levy E.; "Cystatin C. Icelandic-like mutation cerebrovascular beta-amyloidosis.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Saimiri sciureus (Common squirrel monkey).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Platyrrhini; Cebidae; Cebinae; Saimiri.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15-JUL-1998 (Rel. 36,
15-JUL-1998 (Rel. 36,
28-FEB-2003 (Rel. 41,
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                                                                                                                                                                                                                                                          SIGNAL
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SMART; SM00043; CY; 1.
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HSSP; P01034; 1G96.
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Pred. No. 1.7e-06;
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MEDLINE=90008873; PubMed=2793849;
MEDLINE=90008873; PubMed=2793849;
MEDLINE=90008873; Nagase
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"Cystatin. Amino acid sequence and
Biochem. J. 217:813-817(1984).
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28-FEB-2003 (Rel. 41, Last annotation updat)
Cystatin precursor (Egg-white cystatin).
Gallus gallus (Chicken).
                      Dieckmann T., Mitschang L., Hofmann M., Kos J., Turk V., Auerswald E.A., Jeanicke R., Oschkinat H.; "The structures of native phosphorylated chicken cystatin and of a recombinant unphosphorylated variant in solution."; J. Mol. Biol. 234:1048-1059(1993).

J. Wol. Biol. 234:1048-1059(1993).

-thiol proteases including ficin, papain, and cathepsins B, C, E and L. Although isolated from egg white, it is also present in
                                                                                                                                                                                                                                                                                                                                                                              The disulphide
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"Cystatin, a protein inhibitor of cysteine purification from egg white, characterizati
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Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
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MEDLINE=89252033; PubMed=2721673;
                                                                                                                                                                                                                                                                                                                                                                                                                                           chicken serum.";
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"The 2.0 A X-ray crystal structure of its possible mode of interaction with
                                                                                                                                                                                            Bode W., Engh R., Musil D.,
Brzin J., Kos J., Turk V.;
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                                                                                                                                                                                                                                                                      phosphoprotein.
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MEDLINE=94087719; PubMed=8263912;
                                                                                                                                                            EMBO J.
                                                                                                                                                                                                                                                                                "The cysteine proteinase inhibitor
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  SIMILARITY:
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, Longer M., Ritonja A.,
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asi A., Crow H.,
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MEDLINE=87219149; PubMed=3495457;
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Mammalia; Eutheria;
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                        Olafsson I., Lundwall A.;
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Strausberg R.L., Peingold B.A., Grouse L.H., Derge J.G., Klausner R.D., Collins P.S., Wagner L., Shenmen C.M., Schule Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.Fr., Bhat Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh Diatchenko L., Marusina K., Parmer A.A., Rubin G.M., Hong L. Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Sche Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Pran
                                                                                                                                                                      SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Biochem. Biophys. Res. Commun. 162:1324-1331(1989).
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Jensson O., Grubb A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE=90303202; PubMed=2363674;
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SEQUENCE FROM N.A.
                                                                                                                                                     TISSUE=Brain;
                                                                                                                                                                                                          Nature
                                                                                                                                                                                                                                                 Rogera
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                                                                                                                                 MEDLINE=22388257; PubMed=12477932;
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re 414:865-871(2001).
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Icelandic patients with
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PubMed=2764935;
ni L.M., Eddy R.L.,
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, Hsieh F.
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SEQUENCE OF 27-76.
SEQUENCE OF 27-76.
MEDLINE=84128015; PubMed=6365094;
Brzin J., Popovic T., Turk V.;
"Human cystatin, a new protein inhibitor of cysteine"Human cystatin, a new commun. 118:103-109(1984).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H., Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W., Villalon D.K., Muzny D.M., Sodergren B.J., Lu X., Gibbs R.A., Pahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A., Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G., Blakesley R.W., Touchman J.W., Green B.D., Dickson M.C., Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.; "Generation and initial analysis of more than 15,000 full-length human and mouse CDNA sequences.";
Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903 (2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=92316504; PubMed=1352269; Abrahamson M., Jonsdottir S., Olafsson I., Jensson O., Grubb A.; "Hereditary cystatin C amyloid angiopathy: identification of the disease-causing mutation and specific diagnosis by polymerase ch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Grubb A., Loefberg H., I "The disulphide bridges cystatin.";
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                          This
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Janowski R., Kozak M., Jankowska E.,
Abrahamson M., Jaskolski M.;
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                                                                                                                                                                                                                                                                                                                                                                                                                               reaction based analysis.";
Hum. Genet. 89:377-380(1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Human cystatin C, an amyloidogenic three-dimensional domain swapping."
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Turk V., Brzin J., Longer M., Ritonja
     between
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                                                                                                                                                                                                                                                                      SUBUNIT: Homodimer.
TISSUE SPECIFICITY: Expressed in highest
thrain, thymus, and ovary ar
                                                                                                                   DISEASE: Defects in CST3 are a cause of hereditary cerebral hemorrhage with amyloidosis (HCHWA) [MIM:105150]; also known as cerebral amyloid angiopathy (CAA) or cerebroarterial amyloidosis Icelandic type. HCHWA is characterized by a thickening of the cerebral arteries walls with deposition of material with the
                                                                                                                                                                                                                                                                                                                                                   FUNCTION: As an inhibitor of cysteine proteinases, this protein thought to serve an important physiological role as a local regulator of this enzyme activity.
                                                                      characteristics of amyloid.
SIMILARITY: Belongs to the cystatin family.
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                       SWISS-PROT entry is copyright.
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                 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                 Wei L.H., Walker L.C., Levy E., "Cystatin C. Icelandic-like mutation cerebrovascular beta-amyloidosis.", Stroke 27:2080-2085(1996)
                                                                                                                                                                                                                                                                                                                                                               Macaca mulatta (Rhesus macaque)
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between the
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SMART; SM00043; CY; 1.
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REACTIVE SITE.
SECONDARY AREA
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Pred. No. 3e-06;
2; Mismatches
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P01035;
21-JUL-1986
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                                                                                                   entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                     Hirado M., Tsunasawa S., Sakiyama F., Niinobe M., F "Complete amino acid sequence of bovine colostrum l proteinase inhibitor.";
FEBS Lett. 186:41-45(1985).
-!- FUNCTION: This is a thiol proteinase inhibitor.
-!- WASS SPECTROMETRY: MW=13420; METHOD=MALDI.
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TISSUE=Cerebrospinal fluid, and C
MEDLINE=98094199; PubMed=9434110;
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Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21-JUL-1986 (Rel. 01, Created)
15-JUL-1999 (Rel. 38, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Cystatin C precursor (Colostrum thiol proteinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DISULFID DISULFID
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Olsson S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bos taurus (Bovine).
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Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; U51912; AAB64050.1; HSSP; P01034; 1G96.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Olsson S.-L., Ek B., Wilm M., Broberg S., Rask L., B. "Molecular cloning and N-terminal analysis of bovine identification of a full-length N-terminal region.", Biochim. Biophys. Acta 1343:203-210(1997).
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                                   Y10811; CAA71771.1;
P01034; 1G96.
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Pred. No. 3e-06;
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RESULT 15 CSTL_HUMAN ID CSTL_HUMAN

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RESULT 14

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ID CYT_COTJA

PRT; 116 AA.

RC P81061;
DT 15-JUL-1998 (Rel. 36, Created)
DT 26-FEB-2003 (Rel. 41, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE Cystatin (Egg-white cystatin).
OS Coturnix coturnix japonica (Japanese quail).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eut
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Gerhartz B., Engh R.A., Mentele R., Eckerskorn C., Torquato R.,

Wittman J., Kolb H.J., Machleidt W., Fritz H., Auerswald E.A.;

Wittman J., Kolb H.J., Machleidt W., Fritz H., Auerswald E.A.;

"Quail cystatin: isolation and characterisation of a new member of

"Quail cystatin: and its hypothetical interaction with cathepsin
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-!- SIMILARITY: Be:
HSSP; P01038; 1CEW.
                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TISSUE=Egg white;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pfam; PF00031; cystatin; SMART; SM00043; CY; 1.
                                                                                                                                                                             ğ
                                                                                                                                                                                                                                                        Tiniol protease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=93934;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIGNAL
                                                                                                                                                                                                                                                                                                                       Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                              -!- FUNCTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEBS Lett.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROSITE; PS00287; CYSTATII Thiol protease inhibitor;
                                                                                                                                                                                                                                                                                                PROSITE;
                                                                                                                                                                                                                                                                                                                                                           nterPro; IPR000010; Cystatin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
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3
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                                                                           l Similarity
17; Conserv
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                         QYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK
                                                                                                                                                                                                                                                                                                  PS00287;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQKPE
EYNKASNDKYSSRVVRIISAKQQLVSGIKYIMEVEIGRTTCPK
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71
95
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                                                                                                                                                                                                                                      Phosphorylation.
REACTIVE SITE.
SECONDARY AREA
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                                                                           Score 99; DB
Pred. No. 7.6e
12; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 103; DB 1;
Pred. No. 3.1e-06;
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BY SIMILARITY.
; EB740FE37CFB9F0E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REACTIVE SITE.
SECONDARY AREA OF CONTACT
                                                                                                                                                                               PHOSPHORYLATION
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                                                                                                                                                          48248621053A2F70 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                    cystatin family
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                                                                           DB 1,
7.6e-06;
1'
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                                                                                                                                                                                                                                          ဝ္ဗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cebrata; Euteleostomi;
Phasianidae; Phasiani
                                                                             14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15;
                                                                                                                Length 116;
                                                                                                                                                                                                                                          CONTACT
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                                                                                                                                                                                                                                                                                                                                                                                                                                            inhibits papain
                                                                             Indels
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Deloukas P., Matthews L.H., Ashurst J., Burton J., Gilbert J.G.R., Almeida J.P., Babbage A.K., Bagguley C.L., Rab Bailey J., Barlow K.F., Bates K.N., Beard L.M., Beare D.M., Rab Bailey J., Barlow K.F., Bates K.N., Beard L.M., Beare D.M., Rab Beasley O.P., Bird C.P., Blakey S.E., Bridgeman A.M., Brown A.J., Rab Buck D., Burrill W.D., Butler R.P., Carder C., Carter N.P., Chee C.M., Chapman J.C., Clamp M., Clark G., Clark L.N., Clark S.Y., Clee C.M., Rak Chapman J.C., Clamp M., Clark G., Clark L.N., Clark S.Y., Clee C.M., Rak Clegg S., Cobley V.E., Collier R.E., Connor R.E., Corby N.R., Rak Clegg S., Cobley V.E., Collier R.E., Connor R.E., Corby N.R., Rak Clegg S., Cobley V.E., Collier R.E., Connor R.E., Corby N.R., Rak Clegg S., Cobley V.E., Collier R.E., Johnson R.D., Dunn M., Rall R.E., Hall R.E., Hall R.E., Hall R.E., Hammond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J., Rak Hammond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J., Rak Hammond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J., Rak Kay M.P., Kimberley A.M., King A., Knights A., Laird G.K., Lawlor S., Lawlor S., Lawlor S., Lawlor S., Lawlor S., Lawlor S., Marsh V.L., Martin S.L., McConnachie L.J., McLay K., McMurray A.A., Rak Marsh V.L., Martin S.L., McConnachie L.J., McLay K., McMurray A.A., Rak Milne S.A., Mistery D., Moore M.J.F., Mullikin J.C., Nickerson T., Rak Millimore B.J.C.T., Prathalingam S.R., Plumb R.W., Nickerson T., Rak Phillimore B.J.C.T., Prathalingam S.R., Plumb R.W., Ramsay H., Rak Skuce C.D., Smith M.L., Soderlund C., Steward C.A., Sulston J.E., Rak Swann R.M., Sycamore N., Taylor R., Te Elward C.A., Sulston J.E., Rak Williams L., Whittaker P., Willey D.L., Williams L., Williams S.A., Rak Milnesd J., Whittaker P., Willey D.L., Williams L., Williams S.A., Rak Miltesd J., Way P.W., Hubbard T., Durbin R.M., Bentley D.R., Beck S.,
Query Match
Best Local Similarity
                                               CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
SEQUENCE
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SITE
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DISULFID
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or send a
                                                                                                                                                  CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                    Thiol
                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                      use by non-profit institutions as long a modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28-FEB-2003
28-FEB-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nature 414:865-871(2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rogers J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=21638749; PubMed=11780052;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=9606,
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                                                                                                                                                                                                                                                                                     PROSITE; PS00287;
                                                                                                                                                                                                                                                                                                       InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "The DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SIMILARITY:
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P01038; 1A90.
                                                                                                                                                                                                                                                                     protease
                                                                                                                                                                                                                                                                                                                      HGNC:15958;
                                                                                                                                                                                                                                                                                                                                                                                       s requires a license agreement (So an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sequence and comparative
                                                                                                                                                                                                                                                                                                     IPR000010;
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(Rel. 41,
(Rel. 41,
                                                                  93
111
134
134
54
57
86
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118
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                                                  Ä
                                                                                                                                                                                                                                                                     inhibitor;
                                                                                                                                                                                                                                                                                                                                                       CAC03440.2;
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                                                                                                                                                                                                                                                       110; Cystatin; Fauc-
; Cystatin; Fauc-
; Cystatin; Signal.
                                                                                   165
97
121
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annotation updat
                                                                                CYSTATIN-LIKE 1.
SECONDARY AREA OF C
BY SIMILARITY.
BY SIMILARITY.
N-LINKED (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                       .
Score 94;
Pred. No.
                                                                    N-LINKED
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                                                  9D66D685875DAEEA CRC64;
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DB 1; I
4.9e-05;
                                                                  (GLCNAC. .
                                                                                                                                                                                                                                                                                                                                                                                                                        Usage by
               Length 165;
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                                                                                (POTENTIAL).
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(POTENTIAL).
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                                                                    Matches
112
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KRNDTSN 118
                 OKPETTN
                                 YNNASNDTYLYRVQRLIRSQMQERVSHWMLGVHTNSTTDSRQLTTGVEYIVTVKIGWTKC
                                                  YNKESDDKYHFRI FRVLKVQ----
                                                                   Conservative
                 49
                                                                   15;
                                                                    Mismatches
                                                                   13;
                                                  ROVIDHLEYHLNVEMOWITC
                                                                   Indels
                                                                   Gaps
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Search completed: March 18, 2004, 14:16:12 Job time: 5.83333 secs

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Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
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Maximum DB seq length: 200000000
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Perfect score:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
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       SPTREMBL 25:*

1: sp_archea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_invertebrate:*
6: sp_mammal:*
7: sp_mhc:*
9: sp_phage:*
10: sp_plant:*
11: sp_virus:*
12: sp_virus:*
13: sp_vertebrate:*
14: sp_unclassified:*
15: sp_archeap:*
17: sp_archeap:*
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272
1 DQYNKESDDKYHFRIFRVLK.....EYHLNVEMQWTTCQKPETTN 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1017041 seqs, 315518202 residues
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Gapop 10.0 , Gapext 0.5
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sp_organelle:*
sp_phage:*
sp_plant:*
sp_vlant:*
sp_virus:*
sp_vertebrate:*
sp_worlassified:*
sp_bacteriap:*
sp_archeap:*
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Copyright (c) 1993 - 2004 Compugen Ltd.
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

16	15	14	13	12	11	10	9	œ	7	6	5	.4	w	2		Result No.
78	79	79	80	81	81	83	84	97	97	108	122	122	128	162	272	Score
28.7	29.0	29.0	29.4	29.8	29.8	30.5	30.9	35.7	35.7	39.7	44.9	44.9	47.1	59.6	100.0	Query Match I
149	149	146	161	148	109	425	140	112	112	140	141	141	103	139	138	Length 1
11	11	11	S	v	5	w	11	13	13	11	11	11	4	11	4.	Bd
Q8VHC1	Q9D1B1	Q8K397	016159	Q9NH95	Q9TY65	Q12700	Q80Y72	Q98SR3	Q98SR4	Q9EPX9	Q80ZN5	Q9DAP1	Q8WXU5	Q8K5A3	90XM8Ö	ID
Q8vhc1 rattus norv	Q9d1b1 mus musculu	Q8k397 mus musculu	O16159 brugia mala	Q9nh95 litomosoide	Q9ty65 onchocerca	Q12700 debaryomyce	Q80y72 mus musculu	Q98sr3 acipenser s	Q98sr4 acipenser s	Q9epx9 mus musculu	Q80zn5 mus musculu	Q9dap1 mus musculu	Q8wxu5 homo sapien	Q8k5a3 rattus norv	Q8wxu6 homo sapien	Description

45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
59.5	59.5	60	60	60	60	60	60	60.5	61	61.5	61.5	62	62.5	62.5	62.5	63	63.5	64	64	64.5	67	67	83	71	72	74	74	77
21.9	21.9	22.1	22.1			•	22.1		•	22.6		'n	23.0		23.0			23.5	•		4.	4	5	26.1	26.5	7.	•	28.3
586	128	465	462	462	357	275	204	133	159	587	587	693	995	421	302	438	787	167	81	443	284	127	157	167	125	148	144	498
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Q94510	Q9DAN8	Q801E5	Q7SYH2	Q7ZY91	Q7Z465	Q8WYG2	QSTCY7	Q8MVB6	Q8TD53	Q859J0	Q859L1	Q8K145	Q9HCI8	Q9NXS0	Q9H740	Q9URL8	Q8BI82	Q9QWL5	Q29212	Q8ICX8	Q88Z07	P90698	Q17108	Q7Z4J8	Q25620	Q9JM84	Q8JFU5	016454
Q94510 dirofilaria	O9dan8 mus musculu	Q801e5 xenopus lae	Q7syh2 xenopus lae	Q7zy91 xenopus lae	Q7z465 homo sapien	homo	Q8tcy7 homo sapien	Q8mvb6 ixodes scap			Q85911 staphylococ	u	Q9hci8 homo sapien	homo	Q9h740 homo sapien	Q9url8 candida alb		09qwl5 mus musculu	Q29212 sus scrofa			P90698 brugia mala		Q7z4j8 homo sapien	Q25620 onchocerca	Q9jm84 mus musculu	Q8jfu5 brachydanio	

ALIGNMENTS

RESULT Q8K5A3 ID Q0 AC Q0 DT 0:	Db Ma	RESULT QUENTIO ACC ACC ACC ACC ACC ACC ACC ACC ACC AC
ILT 2 Q8K5A3 PRELIMINARY; PRT; 139 AA. Q8K5A3; Q8K5A3; 01-CCT-2002 (TrEMBLrel. 22, Created) 01-OCT-2002 (TrEMBLrel. 22, Last sequence update)	Query Match 100.0%; Score 272; DB 4; Length 138; Best Local Similarity 100.0%; Pred. No. 7.2e-28; Matches 49; Conservative 0; Mismatches 20; Indels 0; Gaps 0; 1 DQYNKESDDKYHPRIFRULKVQRQVTDHLEYHLNVEMQWTTCQKPETTN 49	TUT 1 U06 WXUG PRELIMINARY; PRT; 138 AA. Q8WXUG; 01-MAR-2002 (TrEMBLrel. 20, Created) 01-MAR-2002 (TrEMBLrel. 20, Last sequence update) 01-WAR-2002 (TrEMBLrel. 24, Last annotation update) 01-JUN-2003 (TrEMBLrel. 24, Last annotation update) SC13. Homo sapiens (Human). Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Eukaryota; Metazoa; Chordata; Craniata; Hominidae; Homo. NCBL_TaxID=9606; [1] SEQUENCE FROM N.A. **RATID=9606; [1] SEQUENCE FROM N.A. **SC13: A novel epidddymal specific member of the cystatin family."; SC13: A novel epidddymal specific member of the cystatin family."; SC13: A novel epidddymal specific member of the cystatin family."; SC13: A novel epidddymal specific member of the Cystatin family."; SC13: A novel epidddymal specific member of the Cystatin family."; SC13: A novel epidddymal specific member of the Cystatin family."; SLDmitted (JAN-2001) to the EMEL/GenBank/DDBJ databases. EMBL; AF335480; AAL71991.1; GO; GO:0004869; F:Cystatin. Pfam; PF00031; Cystatin; 1. SMART; SM00043; CY; 1. SMART; SM00043; CY; 1.

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Q9DAP1;
01-JUN-2001
                                        Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
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01-JUN-2001 (TrEMBLrel. 17, Last seq
01-JUN-2003 (TrEMBLrel. 24, Last ann
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EMBL; AR335481; AAL71992.1; -.
EO; GO:0004869; F; Cysteine protease inhibitor activity; IEA.
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Mammalia; Eutheria; Primates;
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GO; GO:0004869; F:Cysteine protease inhibitor activity; IEA
InterPro; IPR000010; Cystatin.
Pfam; PF00031; Cystatin; 1.
SMART; SM00043; CY; 1.
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Hamil K.G., Hall S.H.;
Submitted (APR-2002) to the EMBL/GenBank/DDBJ databases
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1700006C19RIK.
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01-JUN-2003
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01-MAR-2002
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Mammalia; Eutheria; Rodentia;
MAMT TaxID=10116;
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        NCBI_TaxID=10090;
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"hazoa; Chordata; C
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Last annotation update)
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Pred. No. 2e-13;
4; Mismatches
                                        Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
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A Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
A Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
A Arakawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
Ra Asaito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
Radota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
Ra Asaito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
Radota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
Ra Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
Ra Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
Ra Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
Ra Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,
Ra Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,
Ra Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
Ra Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
Ra Sakai K., Okido T., Furuno M., Aono H., Hume D.A., Kamiya M., Lee N.H.,
Ra Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
Ra Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
Ra Gustincich S., Hill D., Hofmann M., Rodriguez I., Sakamoto N.,
Ra Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
Ra Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
Ra Suzuki H., Toyo-oka K., Wang K.H., Weitz C., Whittaker C., Wilming L.,
Wynshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
Hayashtzaki Y., Storch
                                                                 Query Match
Best Local S
Matches 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
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01-JUN-2003 (TrEMBLrel. 24, C

01-JUN-2003 (TrEMBLrel. 24, I

01-CCT-2003 (TrEMBLrel. 25, I

RIKEN cDNA 1700006C19 gene.
                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (MAR-2003) to the EMBL/GenBank/DDBJ databases EMBL; BC048681; AAH48681.1; -. GO: 00:004869; F:cysteine protease inhibitor activity; GO: GO: 00:004869; F:cysteine protease inhibitor activity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
TISSUE=Testicle;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF00031; cystatin; 1. smart; sm00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Nature 409:685-690(2001).
EMBL; AK005665; BAB24175.1; -.
HSSP; P01038; 1CEW.
MGD; MGI:1916544; 1700006C19Rik.
MGD; GO:0004869; F:cysteine protease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
STRAIN=C57BL/6J; TISSUE=Testis;
MEDLINE=21085660; PubMed=11217851;
                                                                                                                                                                                                                                                              Pfam, PF00031; cystatin; 1.
ProDom; PD001231; Cystatin_C/M; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Strausberg R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GO; GO:0004869; F:cysteine pro
InterPro; IPR000010; Cystatin.
                                                                                                                                                                                                                                                                                                                                              InterPro; IPR000010; Cystatin.
InterPro; IPR003243; Cystatin_C/M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hayashizaki Y.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Functional annotation of a full-length mouse cDNA collection.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5
4
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22; Conserv
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                                                                     22;
                                                                                                                                                                                                                                               SM00043;
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                                                                                                     Similarity
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QYNKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK 44
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    141 AA;
                                                                                                                                                                                                               141 AA;
                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rodentia;
                                                                                                  44.9%;
51.2%;
                                                                                                                                                                                                               16825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Chordata;
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; Pred. No. 3.6e
9; Mismatches
                                                                 9;
                                                                 Score 122; DB Pred. No. 3.6e-9; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Craniata; Vertebrata; Euteleosto
Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                           C20FA0D8A884951F
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                                                                                                                                                                                                                                                                                                                                                                                                                          inhibitor activity; IEA
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                                                                                                     DB 11;
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                                                                     12;
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                                                                                                                                  Length 141;
                                                                     Indels
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Q9EPX9;
01-MAR-2001
01-MAR-2001
                                                                                     Bai J., Lao H., Ye X., L1 Y., Lou J.;
"Molecular cloning and sequence analysis of cy
species of sturgeons.";
Submitted (JAN-2001) to the EMBL/GenBank/DDBJ
EMBL; AF334610; AAX16731.1; -.
HSSP; P01038; 1A90.
GO; GO:0004869; F:cysteine protease inhibitor
InterPro; IPR000010; Cystatin.
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VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleost
Actinopterygii; Chondrostei; Acipenseriformes; Acipenseridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; AF311741; AAG40283.1;
HSSP; P01034; 1G96.
                                Pfam; PF00031; cystatin; 1. SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cystatin (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-JUN-2001
01-JUN-2003
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01-JUN-2001
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pfam; PF00031; cystatin; 1.
SMART; SM00043; CY; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa;
Mammalia; Eutheria;
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                                                                                                                                                                                                                                                                                                                                            TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Acipenser sinensis (Chinese sturgeon)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CHAIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GO; GO:0004869; F:cysteine protease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   autocrine/paracrine cofactor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "FGF-2-Responsive neural stem cell autocrine/paracrine cofactor.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN=BALB/c;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=10090;
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                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=61970;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Neuron 28:385-397 (2000)
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(TremBirel. 17, Last seq
(TremBirel. 24, Last ann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
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16
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Rodentia;
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16,
24,
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Pred. No. 2.4e-06;
Pred. No. 2.4e-15;
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SEQUENCE
MEDLINE=22388257; PubMed=12477932; Strausberg R.L., Feingold B.A., Grouse L.H., Derge J.G., Strausberg R.L., Feingold B.A., Grouse L.H., Shenmen C.M., Schuler G.D., Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D., Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K., Hopkins R.F., Jordan H., Moore T., Max S.L., Wang J., Hsieh F., Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L., Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E Stapleton M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
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SEQUENCE
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"Molecular cloning and sequence analysis of cystatin cDN species of sturgeons.";
Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; AF33461; AAK16732.1; -.
HSSP; P01038; 1A90.
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Acipenser schrenckii (Amur sturgeon).
Eukaryota, Metazoa, Chordata, Craniata,
Actinopterygii, Chondrostei, Acipenserif
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DQYWNVVVDHHHYQVFSAGELQRSIDDHITVACNWGWDAKKEYHWNVAGEWSAALTDCAR

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RESULT 10
Q12700
ID Q12700
AC Q1270
AC Q1270
DT 01-NC
DT 01-JU
DE EXO-1
DE (EC SACCh
OC SACCh
OC SACCh
OC NCB1
RN [1]
RN [1]
RR SEQUE
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Best Local :
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Q12700;
01-NOV-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
Exo-1,3-beta-glucanase/1,3-beta-D-glucan glucanohydrolase
(EC 3.2.1.58).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J., Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H., Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W., Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A., Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A., Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G., Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C., Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S., Rozywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E.,
                                                                                                                                                                                                                                                                                                                                                                   HSSP;
GO; GO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
STRAIN-ATCC 26077;
MEDLINE-99154256; PubMed=10029988;
Esteban P., del Rey F., Vazquez De Aldana C.R.;
"Cloning and characterization of 1,3-beta-glucanase-encoding genes from non-conventional yeasts.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (MAR-2003) to the EMBL/GenBank/DDBJ databases.
EMBL; BC048646; AAH48646.1; -.
GO; GO:0004869; F:cystetine protease inhibitor activity; IEA.
InterPro; IPR000010; Cystatin.
InterPro; IPR003243; Cystatin_C/M.
Pfam; PF00031; Cystatin; 1.
ProDom; PD001231; Cystatin; 1.
SMART; SM00043; CY; 1.
                                                                                                                                                                                          Glycosidase;
SEQUENCE 42
                                                                                                                                                                                                                                         GO; GO:0004338; F:glucan 1,3-beta-glucosidase activity; IEA. GO; GO:000453; F:hydrolase activity, hydrolyzing O-glycosyl GO; GO:0005975; F:carbohydrate metabolism; IEA. InterPro; IPR001547; Glyco_hydro_5. PROSITE; P800659; GLYCOSYL_HYDROL_F5; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Fungi; Ascomycota; Saccharom Saccharomycetales; Saccharomycetaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Strausberg R.;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                  Yeast 15:91-109(1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Debaryomyces occidentalis (Yeast) (Schwanniomyces occidentalis).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
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                                                                                                                 Local
                                                                                                                                                                                                                                                                                                                                                                                        Z46871; CAA86951.1; -. P29717; 1CZ1.
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                                                                                                              Similarity
DQYNXESDDXYHFRIFRVLKVQRQVTDHL----
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                                                                                    Conservative
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                                                                                                                                                                                                                             Hydrolase.
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                                                                                                                                                                                                49127 MW;
                                                                                                              30.5%;
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                                                                                 10;
                                                                              Score 83; DB:
Pred. No. 0.011
10; Mismatches
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Pred. No. 0.0034;
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                                                                                                              .015;
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                       ----EYHLNVEMQW----TTCQK 44
                                                                                                                                      Length 425;
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                                                                                 Indels
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RESULT 12
Q9NH95
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Best Local
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01-OCT-2000
01-OCT-2000
01-JUN-2003
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Q9TY65;
01-MAY-2000
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MEDLINE=94336252; PubMed=8058358;
MEDLINE=94336252; PubMed=8058358;
                                                                                        CHAIN
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q9NH95
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                                                                                                                                                      InterPro; IPR000010; Cystatin. Pfam; PF00031; cystatin; 1. SMART; SM00043; CY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Nematoda;
Onchocercidae; Litomosoides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
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                                                                                                             PROSITE; PS00287; CYSTATIN; 1.
CHAIN 25 148 LS-CYSTATIN.
                                                                                                                                                                                                                                                                   Pfaff A.W., Hoffmann W.H., Taylor D.W., Schulz-Rey H.; "Characterization and immunological properties of a cystein inhibitor of the filarial parasite Litomosoides sigmodontis. Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pfam; PF00031; cystatin; 1. SMART; SM00043; CY; 1.
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Parasite Immunol.
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                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=42156;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Litomosoides sigmodontis.
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The property of IgG antibody responses to clone
The property of IgG antibody responses to clone
The property v...,
                                                                                                                                                                                                                          GO:0004869; F:cysteine protease inhibitor activity; IEA
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                    Similarity
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                                                                                        148 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      109 AA;
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                                                                                          16686 MW;
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                    29.8%;
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15,
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Last
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Last annotation update)
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Pred. No. 0.00
14; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Created)
  Score 81; DB 5;
Pred. No. 0.009;
L2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Created)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                      Chromadorea; Spirurida;
                                                                                          2950AA89CA5339C9 CRC64
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annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          inhibitor activity; IEA
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                                            Length 148
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                                                                                                                                                                                                                                                                                                                                                                                                                                                         Filarioidea;
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                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                     Q8K397;
01-OCT-2002
01-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            016159;
                                                                                                                                                                                                                                                                                                                                                                  Gregory W.F., Maizels R.M.;
"Two distinct cystatin-type cysteine protease inhibitors from parasitic nematode Brugis malayi.";
Submitted (AUG-1999) to the EMBL/GenBank/DDBJ databases.
EMBL; AF015263; AAB69857.1; -.
EMBL; AF177193; AAD51086.1; -.
EMBL; AF177193; AAD51086.1; -.
GO; GO:0004869; F:cysteine protease inhibitor activity; IEA.
InterPro; IPR000010; Cystatin.
                                                                                                                                         Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                 01-OCT-2002 (TrEMBLrel. 22, Created)
01-OCT-2002 (TrEMBLrel 22, Last sequence update)
01-OUN-2003 (TrEMBLrel 24, Last annotation updat
RIKEN CDNA 110017E11 gene (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
Gregory W.F., Blaxter M.L.,
Submitted (JUL-1997) to the
                                                                                              Strausberg R.;
                                                                                                                                                                                                                Q8K397
                                                                                                                                                                                                                                                                                                                                           SMART; SM00043; CY;
PROSITE; PS00287; C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Brugia malayi (Filarial nematode worm).
Eukaryota; Metazoa; Nematoda; Chromadorea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-JAN-1998
01-JUN-2003
                          SEQÜENCE
                                                                               EMBL;
                                                                                                       TISSUE=Mammary gland;
                                                                                                                                                            Mus musculus (Mouse).
                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                          Pfam; PF00031; cystatin; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=6279;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Onchocercidae;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cystatin-type
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-JAN-1998
                                           SMART;
                                                   Pfam; PF00031; cystatin; 1.
                                                                                                                SEQUENCE FROM N.A.
                                                                                                                               NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A
                                                             nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13
                                                           L; BC027680; AAH27680.1; -. GO:0004869; F:cysteine protease inhibitor erPro; IPR000010; Cystatin.
                                                                                                                                                                                                                                                            73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62
                                           SM00043; CY;
                                                                                                                                                                                                                                                                                              14;
                                                                                                                                                                                                                                                                            4 NKESDDKYHFRIFRVLKVQRQVTDHLEYHLNVEMQWTTCQK 44
                                                                                                                                                                                                                                                                                              h 29.4%;
Similarity 34.1%;
14; Conservative 1
                                                                                                                                                                                                                                                           NQQSNDEYHLMPIKLLKVSSQVVAGVKYKMEVQVARSECKK 113
                                                                                                                                                                                                                                                                                                                                        PS00287; CYSTATIN; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NQQSNDAYHLMPIKVLKVSSQVVAGMKYKMEIQVARSDCKK 102
                                                                                     (APR-2002) to the EMBL/GenBank/DDBJ
                          146
                                                                                                                                                                                                                                                                                                                                  161 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (TrEMBLrel. 05, Created)
(TrEMBLrel. 05, Last sequence update)
(TrEMBLrel. 24, Last annotation update)
be cysteine proteinase inhibitor.
                                                                                                                                                                                                                PRELIMINARY;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Brugia.
                                                                                                                                          Chordata;
Rodentia;
                          16380 MW;
                                                                                                                                                                                                                                                                                                                                 18406 MW;
29.0%;
33.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Maizels R.M.;
EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                      Score 80;
Pred. No.
Score
Pred.
                                                                                                                                                                                                                                                                                              Pred. No. 0.0:
3; Mismatches
                                                                                                                                         Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                          9D77BB9A6063A5C4 CRC64;
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79;
No.
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DB 11;
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                                                                                                                                                                            update)
                                                                                                                                                                                                                                                                                              14;
                                                                     activity; IEA
                                                                                      databases
                                                                                                                                                                                                                                                                                                               Length 161;
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                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                          Murinae; Mus
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01-JUN-2001
01-OCT-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T., Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barah G., Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F., Brownstein M.J., Bult C., Fletcher C., Pujita M., Gariboldi M., Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H., Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P., Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N., Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F., Suzuki H., Toyo-oka K., Wang K.H., Weitz C., Whittaker C., Wilming L., Schambay-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Kawai J., Shinagawa A., Shibata K., Yoshino Marakawa T., Hara A., Fukunishi Y., Konno H., Karakawa T., Izawa M., Nishi K., Kiyosawa H., Kaloto T., Okazaki Y., Gojobori T., Bono H., Maraki Y., Gojobori M., Batalo Kadota K., Matsuda H.A., Ashburner M., Batalo Richard M., Batalo Richard M., Matsuda H.A., Ashburner M., Batalo Richard M., Matsuda H.A., Ashburner M., Batalo Richard M
                                                                                                                                                                                                                                    88
                                                                                                                                                                                                                                                                                                                                                         EMBL; AK003744; BABZ2976.1;
EMBL; AY093591; AAM11475.1;
EMBL; AK078116; BAC37132.1;
HSSP; P01038; 1CEW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
STRAIN=C57BL/63; TISSUE=Medulla oblongata;
MEDLINE=22354683; PubMed=12466851;
The FANTOM Consortium,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN=129S6/SvEvTac; TISSUE-Spleen;
Zeeuwen P.L.J.M., van Vlijmen-Willems I.M.J.J.,
Merkx G.F., Schalkwijk J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Fleischmann W., Gaasterland T.
Kuehl P., Lewis S., Matsuo Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN=C57BL/6J; TISSUB=Embryo; MEDLINE=21085660; PubMed=11217851;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q9D1B1;
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                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60,770 full-length cDNAs.";
Nature 420:563-573(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the RIKEN Genome Exploration Research Group Phase I & II "Analysis of the mouse transcriptome based on functional
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "A mouse cystatin M/E-null mutation.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1110017E11Rik protein (Cystatin M/E)
1110017E11RIK OR CST6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nature 409:685-690(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Functional annotation of a full-length mouse cDNA collection.";
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                                                                                                                                                                                                   InterPro;
                                                                                                                                                                                           , MGI:1920970; Cst6.
GO:0001533; C:cornified envelope; IDA.
GO:0008544; P:epidermal differentiation;
erPro; IPR000010; Cystatin.
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                                                                                                                                                             PF00031;
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(TrEMBLrel. 17, Last sequence update)
(TrEMBLrel. 25, Last annotation update)
(TremBlrel. 25, Last annotation update)
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                                                                                                                    cystatin; 1
AA; 16796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chordata;
Rodentia;
29.0%;
33.3%;
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                                                                                                                        ₩,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13;
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Score
Pred.
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                                                                                                                    E713EB920E0EFCC5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
79;
No.
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DB 11;
0.017;
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                                     Length 149;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Team;
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